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SUBJECT: **(主旨)** JL328/378/408-XP Service Manual	**MODEL NO: JL328/378/408-XP** **(機種)** **DOC.NO:** **(文件編碼)** **EFFECTIVE DATE:** **(生效日期)** 發行一日後生效	**REVISION: A1** **(文件版本)** **PAGE 1 OF 56** **REVISION STATUS** **(內文版本)**

(變更記錄)

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JL328/378/408-XP

Service Manual

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1. Precautions and Safety Notices

Prior to using this service manual,please ensure that you have carefully followed all the procedures outlined in the user's manual for this product.

(1) Read all of these instructions.
(2) Save these instructions.
(3) Follow all warnings and instructions a marked on the product.
(4) Unplug this product from the wall outlet before cleaning.Do not use liquid cleaners or aerosol cleaners, use a damp cloth for cleaning.
(5) Do not use this product near water.
(6) Do not place this product on an unstable cart,stand or tablle.The product may fall,causing serious damage to the product.
(7) Do not tear up the EMI label, if the label has been destroyed,that must to past same size label on the same position.
(8) Slots and openings in the cabinet and the back or bottom are provided for ventilation,to ensure reliable operation of the product and to protect it from overheating,those openings must not be blocked or covered.The openings should never be blocked by placing the product on a bed,sofa, rug, or other similar surface.This product should not be placed in a built-in installation less proper ventilation is provided.
(9) This products should be operated from the type of power source indicated on the marketin label. If you are not sure of the type of power available, consult your dealer or local power company
(10) This product is equipped with a 3-wire grounding type plug,a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature, if you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.
(11) Pay attention to the code which connects with apheliotropism board of inside panel.and don't hook it.
(12) Do not allow anything to rest on the power cord.Do not locate this product where persons will walk on the cord.
(13) If an extension cord is used with this product,make sure that the total of the ampere ratings on the product plugged into the extension cord to the waplugged into outlet does not exceed 15 ampere.
(14) Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock.Never spill liquid of any kind on the product.
(15) Do not attempt to service this product yourself,as opening or removing covers may expose you to dangerous voltage points or other risks.Refer all servicing to service personnel.
(16) Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions :

- **a.** When the power cord or plug is damaged or frayed.
- **b.** If liquid has been spilled into the product.
- **c.** If the product has been exposed to rain or water.
- **d.** If the product does not operate normally,when the operating instructions are followed.Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extension work by a qualified technician to restore the product to normal operation.
- **e.** If the product has been dropped or the cabinet has been damaged.
- **f.** If the product exhibits a distinct change in performance,indicating a need for service.

2. Specification

328XP Panel

Item	Specifications
Display pixels	1366 (H) x 768 (V) pixels (1 pixel = 1 RGB cells)
Display Area	708.954mm(H) x 398.592mm (V)
Pixel Pitch	0.1730 (H) x 0.5190 (V)mm
Display Colors	16.7M
Pixel Arrangement	R+G+B vertical stripe
Display Mode	Normally Black Mode
Brightness	550nits
Contrast Ratio	1000:1 typical
Brightness Uniformity	75% min.
Viewing Angle	±88° (H), ±88°(V) Typical at CR ≧ 20
Color Saturation	NTSC 75%
Color Chromaticity (CIE)	White: x =0. 285 , y= 0.293
Frame Rate	50Hz/60Hz
Response Time	8ms typical
Surface Treatment	AG,3H

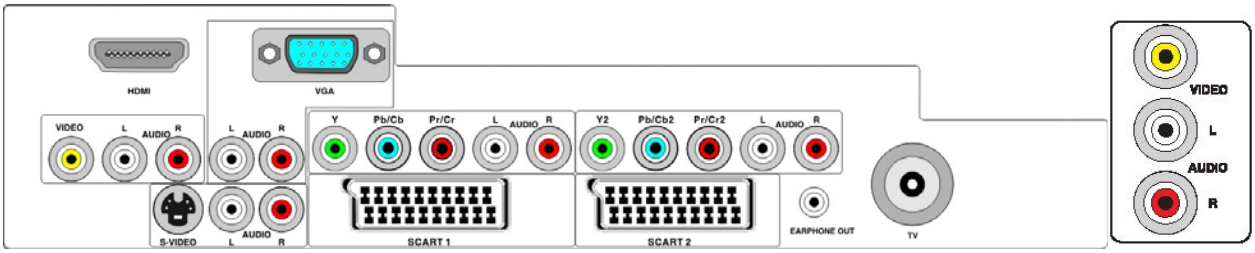
378XP Panel:

Item	Specifications
Panel Name	AUO
Panel Model No.	T370XW01
Display pixels	1366 (H) x 768 (V) pixels (1 pixel = 1 RGB cells)
Display Area	819.6mm (H) x 460.89mm (V)
Pixel Pitch	0.6mm
Display Colors	16.7M
Pixel Arrangement	R+G+B vertical stripe
Brightness	500nits typical
Contrast Ratio	1000:1 typical
Viewing Angle	±88° (H), ±88°(V) Typical at CR ≧ 10
Color Chromaticity (CIE)	White: x= 0.280 , y =0. 290
Response Time	8ms (Gray to Gray)
Surface Treatment	Hard-Coating (3H), Anti-Glare, Reflectance < 2%

408XP Panel:

Item	Specifications
Panel Name	SAMSUNG
Display pixels	1366 (H) x 768 (V) pixels (1 pixel = 1 RGB cells)
Display Area	885.168mm (H) x 497.664mm (V)
Display Colors	16.7M
Pixel Arrangement	R+G+B vertical stripe
Brightness	500nits typical
Contrast Ratio	1200:1 typical
Viewing Angle	±89° (H), ±89°(V) Typical at CR ≧ 10
Color Chromaticity (CIE)	White: x= 0.280 , y =0. 290
Response Time	8ms (Gray to Gray)
Surface Treatment	Haze 40%， Hard-Coating (3H)

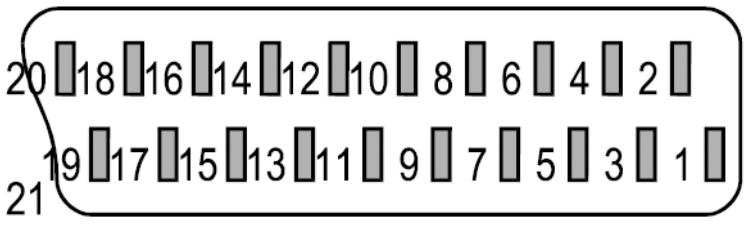
INPUT Source :



Inputs & Outputs Signals	Video Format	Connector types	
		Video	Sound
Main-TV	PAL/ SECAM	PH Type	None
RGB+Y/C+ CVBS(input/output)+ L/R(input/output)	RGB+Y/C+ CVBS(input/output)+ L/R(input/output)	SCART 21pin	
RGB+Y/C+ CVBS(input/output)+ L/R(input/output)	RGB+Y/C+CVBS(input/output)+L/R(input/output)	SCART 21pin	
Video1 + L/R Audio	CVBS	RCA x 1	RCA x 2(Red, White)
Video2 + L/R Audio	CVBS	RCA x 1	RCA x 2(Red, White)
S-VIDEO+ L/R Audio	Y/C	Mini Din 4 Pin	RCA x 2(Red, White)
Component1(Y,Pb/Cb,, Pr/Cr) + L/R Audio	480i.576i.480p,576p.720p, 1080i	RCA x 3	RCA x 2(Red, White)
Component2(Y,Pb/Cb2,, Pr/Cr2) + L/R Audio	480i.576i.480p,576p.720p, 1080i	RCA x 3	RCA x 2(Red, White)
VGA+ L/R Audio	Analog RGB	VGA15 Pin	RCA x 2(White, Red)
HDMI	Digital signal	HDMI 19Pin	

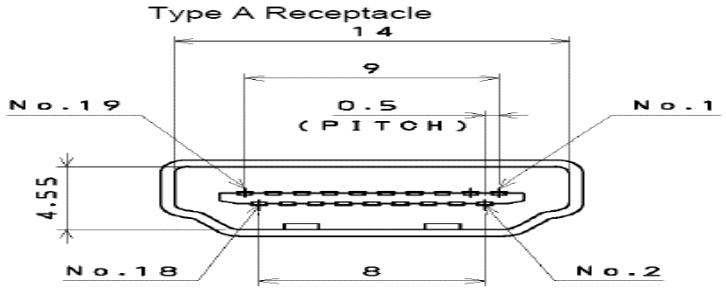
Note:

A. SCART connector



Pin Number	Pin Name	Signal Level	Impedance
1	Audio Output, Right	0.5V RMS	<1 kΩ
2	Audio Input, Right	0.5V RMS	<1 kΩ
3	Audio Output, Left	0.5V RMS	<1 kΩ
4	Ground, Audio	-	-
5	Ground, Blue	-	-
6	Audio Input, Left	0.5V RMS	<1 kΩ
7	Blue Input	0.7V	75 Ω
8	Function Select (A/V Control)	High (9.5-12V) – A/V Mode, Mid (5-8V) – Wide-screen, Low (0-2V) – TV Mode	>10 kΩ
9	Ground, Green	-	-
10	Comms Data 2	-	-
11	Green Input	0.7V	75 Ω
12	Comms Data 1	-	-
13	Ground, Red	-	-
14	Ground, blanking	-	-
15	Red Input	0.7V	75 Ω
16	RGB switching Control	High (1-3V) – RGB, Low (0-0.4) – Composite	75 Ω
17	Ground, Video input & output	-	-
18	Ground, RGB Switching control	-	-
19	Video Output, composite	1V including sync	75 Ω
20	Video Input, composite	1V including sync	75 Ω
21	Common Ground, shield	-	-

B. HMDI connector is a type A receptacle for video/audio mode.



1. TMDS Data 2+	**9.** TMDS Data 0-	**17.** CEC/GND
2. TMDS Data 2 shield	**10.** Clock +	**18.** +5V Power
3. TMDS Data 2-	**11.** Clock shield	**19.** Hot Plug Detect
4. TMDS Data 1+	**12.** Clock -	
5. TMDS Data 1 shield	**13.** CEC	
6. TMDS Data 1-	**14.** NC	
7. TMDS Data 0+	**15.** DDC CLK	
8. TMDS Data 0 shield	**16.** DDC DATA	

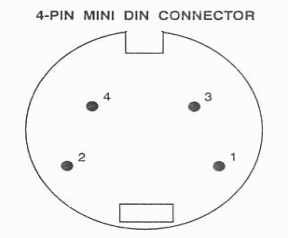
C. D-Sub Connector IN. (This function also can provides to HDTV.)

D-Sub type Connector pin assignment		
1. Red Video	6. Red Ground	11. GND
2. Green Video	7. Green Ground	12. SDA For DDC1/2B
3. Blue Video	8. Blue Ground	13. H-sync.
4. GND	9. +5V from PC	14. V-sync.

5. Vdd from PC for DDC	10. Sync. GND	15. SCL For DDC1/2B

a) RCA jacks are all female type.

b) Mini DIN CNC 4 Pins (SCN570S3NS00000) for S-video, the pin assignment is described as below:



1: Ground
2: Ground
3: Y
4: C

HDMI	
Format	DVI 1.0
Level/Impedance	0.5~3.0Vp-p/100 Ohm (Differential),50 Ohm (Single ending)
TMDS Mode	Single Link
Frequency	Fh = 31~80 kHz Fv = 50~75 Hz
Maximum Pixel Clock	135 MHz
DDC 1/2B	Compliant with Revision 1.0
Connector	HDMI x 1
Analog HD15 PC Signal (RGB)	
Format	R, G, B Analog
Level/Impedance	0.7Vp-p / 75Ω
DDC 1/2B	Compliant with Revision 1.0
Sync	H/V separate 3V TTL level / 1kΩ
Frequency	Fh = 31~80 kHz Fv = 50~75 Hz
Maximum Pixel Clock	135 Mhz
Connector	Mini D-Sub 15 pin (female) x 1
Video (Composite) CVBS Signal	
Format	NTSC, NTSC4.43, PAL_M, PAL(B,G,H,D,N), SECAM
Level / Impedance	1.0Vp-p / 75Ω
S-Video (Y/C) Signal	
Format	Y, C
Level / Impedance	Y: 1.0Vp-p / 75Ω C: ± 286 mV/ 75Ω
Analog HD15 Video Signal (YPbPr/YCbCr)	
Format	Y, Pb, Pr or Y, Cb, Cr
Level / Impedance	Y: 1.0Vp-p / 75Ω Pb/Cb, Pr/Cr: 0.7 ± 0.035Vp-p / 75Ω

HDMI Mode

PRESET MODES	HDMI 640X480P	HDMI 720X480P	HDMI 1280X720P	HDMI 1280X720P	HDMI 1920X1080	HDMI 1920X1080I
F. V	59.941Hz	59.941Hz	50Hz	59.941Hz	59.941Hz	50Hz
PRESET MODES	HDMI 640X480P	HDMI 720X480P	HDMI 1280X720P	HDMI 720X576P	HDMI 1920X1080	
F. V	60Hz	60Hz	60Hz	50Hz	60Hz	

RGB PC Timing

STANDARD	RESOLUTION	V FREQ Hz	H FREQ kHz	CLK MHz
VGA	640x480	60	31.47	25.16
VGA	640x480	75	37.5	31.5
SVGA	800x600	60	37.88	40
SVGA	800x600	75	46.9	49.5
XGA	1024x768	60	48.36	65.0
XGA	1024x768	75	60.02	78.75
SXGA	1280x1024	60	64	108
SXGA	1280x1024	75	80	135
MAC	640x480	67	35	30.24

Video & S-Video AV Timing

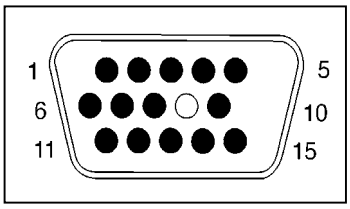
STANDARD	RESOLUTION	V FREQ Hz	H FREQ kHz	CLK MHz
NTSC	525	60	15.734	12.65
PAL(B,G,H,D,I)	625	50	15.625	14.50
SECAM	625	50	15.625	14.50
NTSC4.43	525	60	15.734	12.65
PAL-M	525	60	15.734	12.65
PAL-N	625	50	15.625	14.50

HDTV (SDTV) Mode

PRESET MODES	SDTV 480I	SDTV 576I	SDTV 480P	SDTV 576P	HDTV 720P	HDTV 720P	HDTV 1080I
F. V	60Hz	50Hz	60Hz	50Hz	50Hz	60Hz	50Hz
PRESET MODES	HDTV 1080I						
F. V	60Hz						

Power Source	AC100 – 240 V, 60/50 Hz
Sound Output	10W X2, 4 Ohm.

Signal Connector Pin Assignment

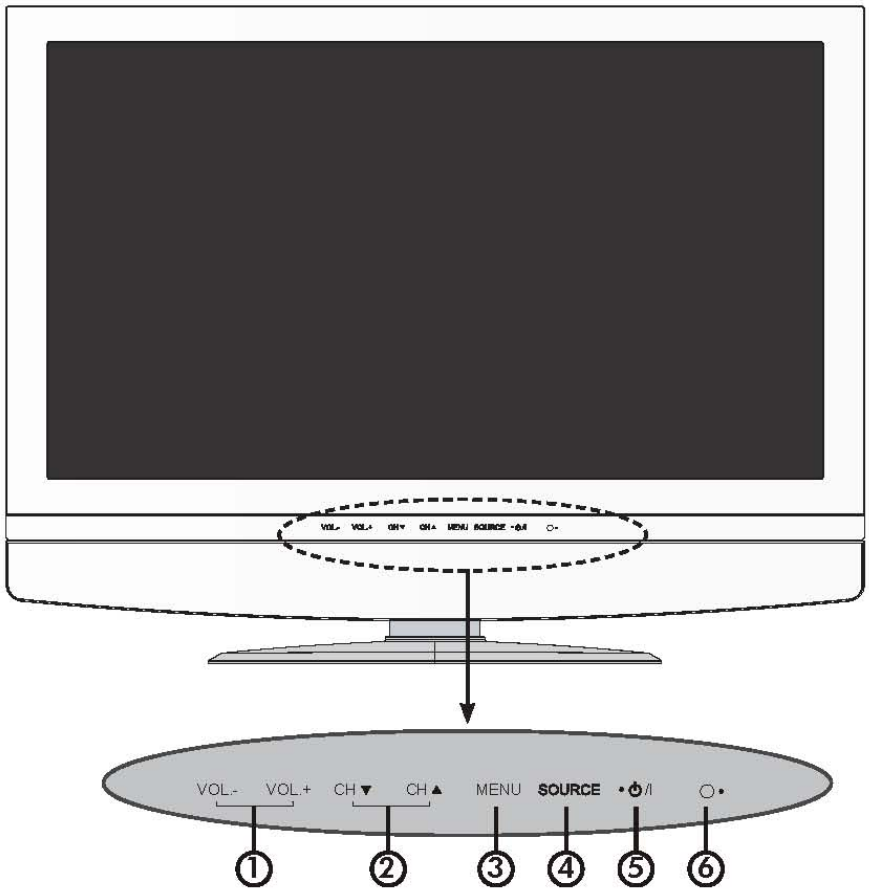


Pin	Assignment	Pin	Assignment	Pin	Assignment
1.	Red	6.	Red Ground	11.	Ground
2.	Green	7.	Green Gro und	12.	SDA
3.	Blue	8.	Blue Ground	13.	Horizontal Sync.
4.	Ground	9.	Not Connected	14.	Vertical Sync.
5.	Self Test	10.	Sync. Ground	15.	SCL

3. Front Panel Function Control Description

Operation, Adjust and Programming

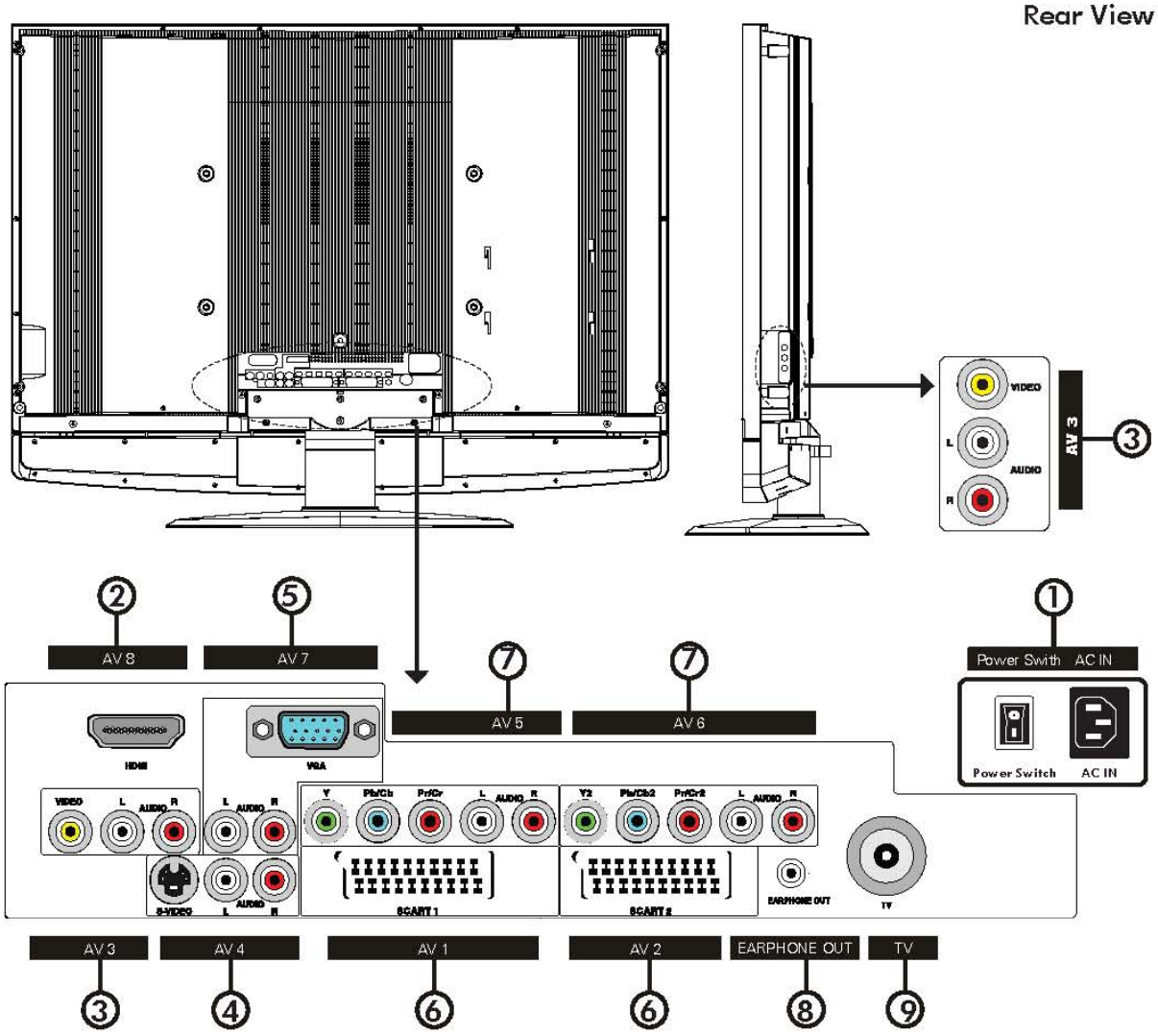
Front View



Front View

ITEM	DESCRIPTION
1 VOLUME	Adjusts the volume up and down. Changes settings for items and the value for items on the OSD mode.
2 CHANNEL	Scans up and down through channels. Selects sub-menu items on the OSD mode.
3 MENU	Press **MENU** to display the OSD (on screen display).
4 SOURCE	Chooses from different input signal sources.
5 ⏻/I	Turns the LCD TV on and off.
6 IR	Infrared Receiver (IR)

Rear View



ITEM	DESCRIPTION
1 AC IN/Power Switch	Connects the AC power cord./ Turns the LCD TV on and off.
2 AV8 HDMI	Connects to a digital set-top box or other deceives with a HDMI interface.
3 AV3 VIDEO/AUDIO(L/R)	Connects to the composite A/V output jacks on your video equipment. When Video/Audio of TV rear and side have been plug in the TV at the same time. TV will to priority of read the Video/Audio of TV rear.
4 AV4 S-VIDEO/AUDIO(L/R)	Connects to the S- VIDEO output jacks and Audio output jacks on your video equipment.
5 AV7 VGA IN/AUDIO(L/R)	Connects to a digital set-top box or other deceives with a VGA interface.
6 AV1/AV2 SCART	Connects to a piece of AV equipment with a SCART socket. The SCART interface offers CVBS signals, with audio input/output between the TV and external video equipment.
7 AV5/AV6 COMPONENT/AUDIO(L/R)	Connects to the component (Y, Pb/Cb, Pr/Cr) video jacks and audio (L/R) jacks of your DVD player, HDTV, or video equipment.
8 EARPHONE OUT	Connects to your earphone.
9 TV	The RF input that connects to your VHF/UHF antenna or cable.

1 **POWER**
Turns the LCD TV on and into standby mode .

2
Mutes and restores your LCD TV sound.

3 **I-II**
Cycles through the TV Sound options:
MONO/DUAL/STEREO

4 **SLEEP**
Sets the LCD TV sleep time.

5 **P.SIZE**
Selects from the following modes settings:
16:9 ,14:9, Zoom , Spectacle, Full, Original, 4:3.

6 **FAV.CH**
This function make you select your favourite programmes directly.

7 **PIP**
Turns on and off the PIP/POP function.

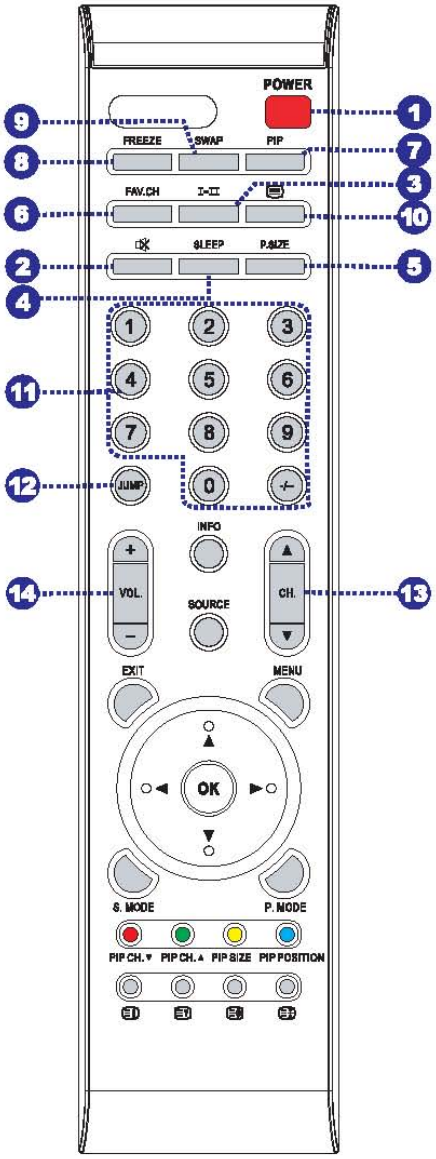
8 **FREEZE**
Freezes and restores the picture.

9 **SWAP**
Exchange the picture between the main and sub-picture.

10
Turns on and off the Teletext function.

11 **0-9**
Select and switch to a channel by using 0-9 buttons.
-/--
The one/two digit numbers can be set by pressing -/-- button.

12 **JUMP**
Switches back and forth between the current and previous channels.



13 **CH. ▲/▼**
Changes the channels up and down .

14 **VOL. +/-**
Adjusts the volume.

15 INFO

Displays information on the LCD TV screen such as channel and channel label.

16 SOURCE

Cycles among the different input signal sources:

TV→ AV1→ AV2→ AV3 →AV4 →AV5→AV6 →AV7 → AV8

17 EXIT

Exits the OSD menu (on-screen display), the TELETEXT Mode ,PIP/POP Mode.

18 MENU

Displays the OSD menu (on screen display).

19

Allows you to move, select and set up the OSD options.

20 S.MODE

Selects sound mode:Flat,Music,Movie,Speech, User. (See Page 35 for details)

21 P.MODE

Selscts picture mode:Standard,Mild,Game,User, Dynamic. (See Page 30 for details)

22

Accesses the Teletext items or corresponding pages.

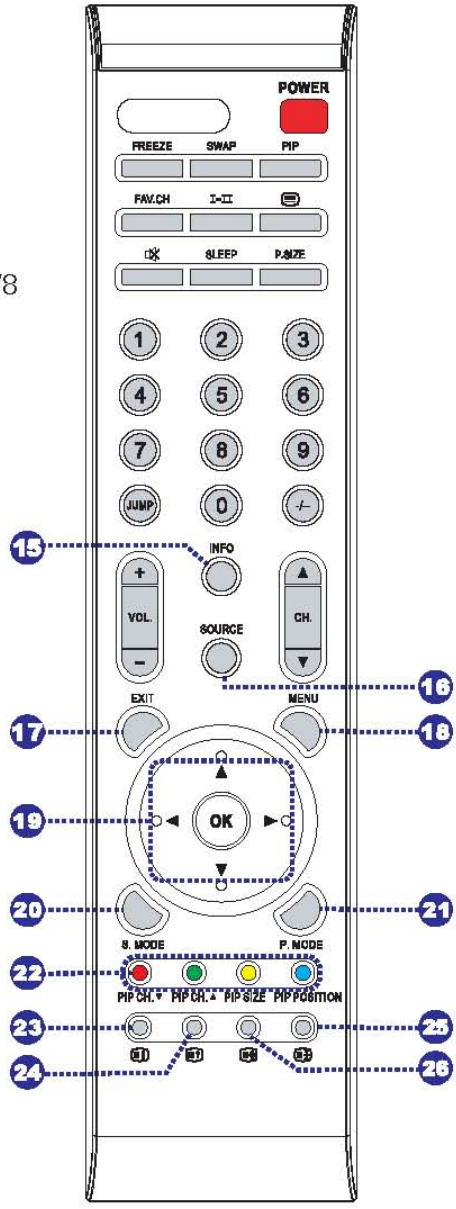
PIP CH ▼/ ▲: select a programme for the sub-picture.
PIP SIZE: Allows you to adjust picture size in PIP/POP/DW Mode.
PIP POSITION: Allows you to adjust sub-picture position in PIP Mode only.

23

Displays the main index in Teletext mode.

24

Reveals hidden information such as the answer to a quiz in Teletext mode.



25

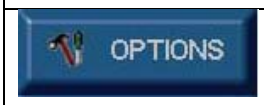
Freezes a multi-page passage on screen in Teletext mode.

26

Displays the top, bottom or all of page, to easily read in Teletext mode.

The operation of each OSD controls is described as following table:

Main Menu	Sub Menu	Option	Adjustment
	Auto Programme	Audio System[1]	Press ◄/► to select the audio system to be I,DK,L or BG
		Auto Search	Press ◄/► to search program automatically
	Manual Search	Program No	Press ◄/► to display the current program No.
		Audio System	Press ◄/► to select the audio system to be I,DK,L or BG
		Channel Type	Press ◄/► to select the Channel type to be V,UHF or Cable.
		Channel No.	Press ◄/► to display the prior storage information on the Tune
		Manual Search	Press ◄/► to search channel manually
		Fine Tune	Press ◄/► to fine tune the current programme No.
		Name	To edit the channel name
	Color System		Press ◄/► to select the color system to be Auto,PAL,SECAM,PAL60,NTSC or N443
	Programme Edit		Press ◄/► to edit the progamme
	Favourite Programme		Set the favorite program
	Picture Mode		Press ◄/► to select the Video mode to be Dynamic, Standard, Mild, Game and User.
	Black Extend		Press ◄/► to select the Black Extend to be On or Off
	Color Temp.		Press ◄/► to adjust the Color Temperature to be Cool, Normal, Warm, User. Red, Green, Blue
	Color Adjust		Press ◄/► to adjust the Fleshone,Greentone and Bluetone value
	Contrast		Press ◄/► to adjust the Contrast from 0 to 100
	Brightness		Press ◄/► to adjust the Brightness from 0 to 100
	Saturation		Press ◄/► to adjust the Saturation from 0 to100
	Sharpness		Press ◄/► to adjust the Sharpness from 0 to 100
	Hue		Press ◄/► to adjust the Hue from 0 to 100(Only for NTSC)
	VOLUME		Press ◄/► to adjust the Volume from 0 to 100
	Sound Mode		Press ◄/► to select the Sound mode to be Flat, Music, Movie, Speech or User
	Surround		Press ◄/► to select the Surround to be On or OFF
	Balance		Press ◄/► to adjust the balance from 0 to 100
	100Hz		Press ◄/► to adjust the 100Hz from 0 to100
	500Hz		Press ◄/► to adjust 500Hz from 0 to 100
	1.5KHz		Press ◄/► to adjust 1.5KHz from 0 to 100
	5KHz		Press ◄/► to adjust 5KHz from 0 to 100
	10KHz		Press ◄/► to adjust 10KHz from 0 to 100
	Clock		Press ◄/► to adjust the current time
	Turn Off		Press ◄/► to set the off time

	Clock	Press ◄/► to adjust the current time
	Language	Press ◄/► to select the language to be English, French, German, Portuguese, Spanish, Polish, Italian or Dutch
	OSD Time out	Press ◄/► to select the OSD Timeout to be 15,20, 25, 30, 40sec.
	Turn On	Press ◄/► to set the on time.
	Blue Screen	Press ◄/► to set the Blue Screen to be On or Off
	Keypad Lock	Press ◄/► to select the Keypad Lock to be On or Off.
	Transparent	Press ◄/► to select the transparent to be On or Off
	OSD Reset	To return to the factory default
	Auto Config.	Press ◄/► to set the auto config.
	Manual Config.	Press ◄/► to enter into the option, use the to adjust the Phase, Clock, H-Position and V-Position
	Display Mode	Press ◄/► to select the display mode to be Spectacle, Full, Original, 4:3, 16:9, 14:9 and Zoom.
	Zoom In/Out	Set the current image to zoom in /out
	Position	Press ◄/► to set the image position on TV screen
	Cinema	Press ◄/► to select the Cinema to be On or Off
	Noise Reduce	Press ◄/► to set the 3D Noise reduce value
	Reset	To recall to the factory default
	Input	Press ◄/► to select the Source to be TV,AV1(Scart1),AV2(Scart2),AV3(CVBS),AV4(S-Video), AV5(YPbPr1),AV6(YPbPr2),AV7(VGA) or AV8(HDMI)
	Double Window	Press ◄/► to select the Double window to be DW1,DW2,OFF
	PIP	Press ◄/► to select the PIP to be On or OFF
	PIP Input	Press ◄/► to select the PIP source to be TV,AV1(Scart1),AV2(Scart2),AV3(CVBS),AV4(S-Video), AV5(YPbPr1),AV6(YPbPr2),AV7(VGA), AV8(HDMI)
	Win.Size	Press ◄/► to adjust the window size
	Win. Position	Press ◄/► to adjust the window position (only TV)

4. Adjusting Procedure

ITEM Program Menu.		Equipments	Requiremen	Procedure and SPEC
1	**VIDEO adjustment**	DVD Video Cable	Play DVD Set DVD to interlaced	Screen is clear and fluent
2	**S-VIDEO**	DVD S-Video Cable	Play DVD Set DVD to interlaced output	Screen is clear and fluent
3	**TV**	Genertor"FLUKE54200"		Send TV source through 54200 Noise Reduce Adjusts the Noise Reduce to be 3,and make snow to be lighter Adjusts the Noise Reduce to be 0,and make snow to be bad
4	SCART1/SCART2 adjust	FLUKE 54200	Set the FLUKE 54200 to be Y/C,RGB and CVBS	Press SOURCE key to select the SCART1/SCART2 Check if the screen is clear and fluent Check if the Teletext is normal on the SCART(CVBS)
5	SCART1/SCART2 check	FLUKE 54200	Set the FLUKE 54200 to be Y/C,RGB and CVBS	Check if the screen is clear and fluent Check if the Teletext is normal on the SCART(CVBS) Press any key to be deviate from the originally value Display the blue screen without signal
6	SCART Mode wide screen scale Auto detect	FLUKE 54200	Set the FLUKE 54200 to be 4:3/16:9	Select the SOURCE to be TV/AV1/AV2 /AV3 Selects the Original of Display mode on the SCREEN menu Check it is normal that picture Mode is differentiated automatically
7	Auto Sourcing of SCART	FLUKE 54200		Selects the TV Inserts SCART input cable Check if it is swatched to the SCART mode and pull out the SCART cable,Make sure it will to swatch to the TV mode

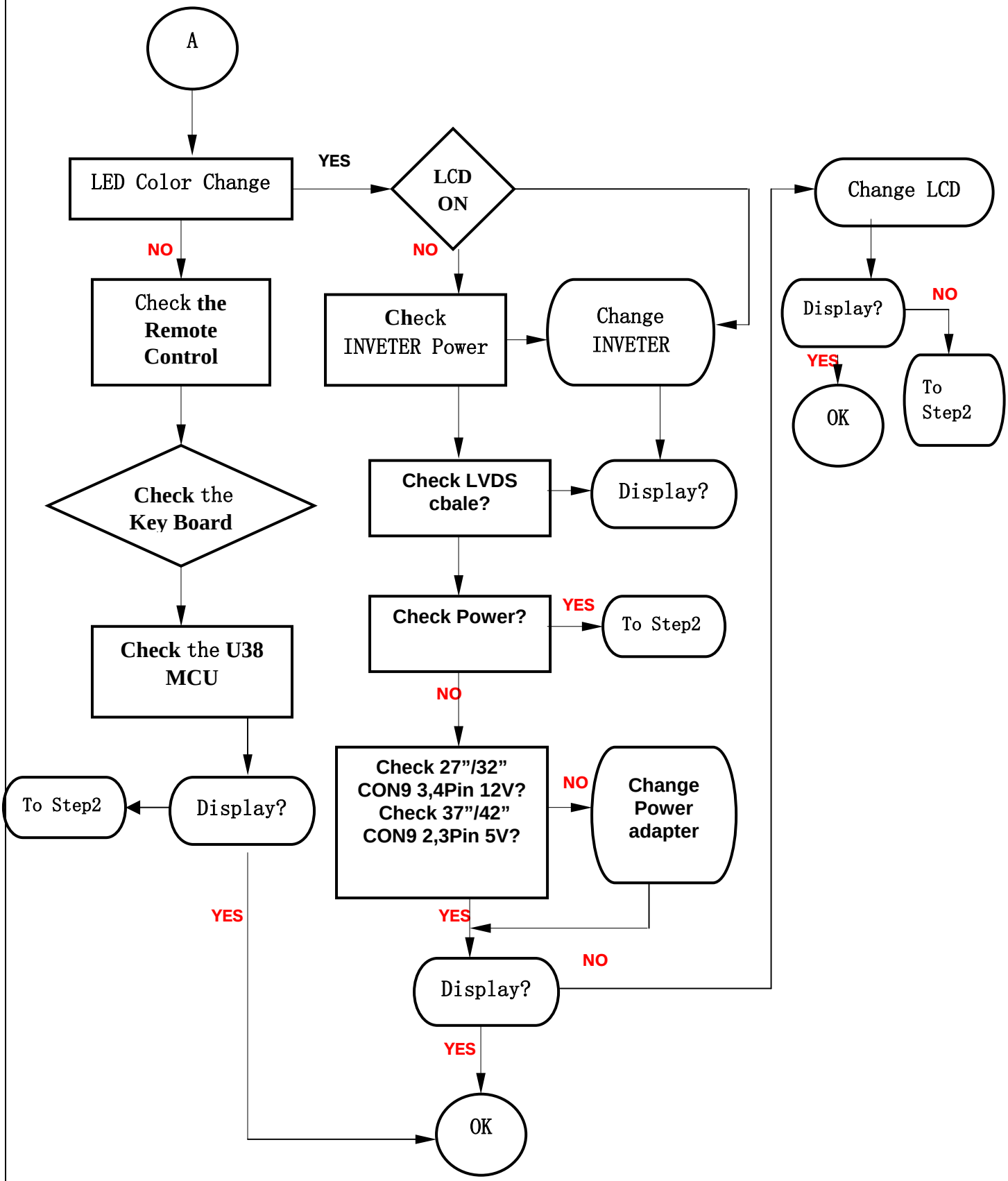
8	Teletext operation	FLUKE 54200	Sets the Teletext output	● Selects the Sourceto be TV/AV1/2(SCART CVBS)/AV3 ● Operats Switch Teletext key ● Check if the teletext is normal
9	**DVD** **(Y,Pb,Pr1 / Y,Pb,Pr2)** 480i.576i.480p.576p.720p, 1080i	DVD Component Cable 720p/1080i DVD Player Samsung HD-931	Play DVD(Y,Pr,Pb) Set the DVD to progressive output	Screen is clear and fluent
10	**HDTV** **(Y,Pb,Pr1 / Y,Pb,Pr2)** 480i.576i.480p.576p.720p, 1080i	HDTV Receiver ATSC HDTV Tuner SAMSUNG SIR-T165 BS Tuner: **Panasonic** **TU-BHD300** Component Cable	Play HDTV (Y, Pb, Pr)	Screen is clear and fluent D-VHS Digital HDTV Video Cassette Recorder JVC HM-DH30000U Panasonic NV-DH2
11	**VGA**	PC VGA Cable DVI Cable	PC Mode	**1.** Selects **Source to be AV7(VGA)** **2.** Each Mode can display normally。If there is a specific Mode that is not appropriate after switching ，press Auto Adjust can automated adjust to appropriate screen.
12	**VGA**	TV BOX VGA Cable		Utilize external-connected TV BOX, watching the TV program; the screen is clear and fluent.
13	**HDMI**	SAMSUNG DVD-HD948 QUANTUMDATA802BT		1. Selects **Source to be AV8(HDMI)** 2. Each Mode can display normally。 Screen is clear and fluent
14	**HDCP Test**	QUANTUMDATA802BT		1. Selects SOURCE to be AV8(HDMI) 2. Check the test source with HDMI/HDCP through the 802BT source generator,and check if the OSD displays “PASS”
15	**Display Mode test**	PC DVD S-Video cable Video Cable Or TV SIGNAL /FLUKE54200		1. Selects SOURCE to be TV,AV1,AV2,AV4,AV5,AV6,AV7,AV8 2. Press MENU to adjust Display Mode 3. Check if each Display Mode is normal

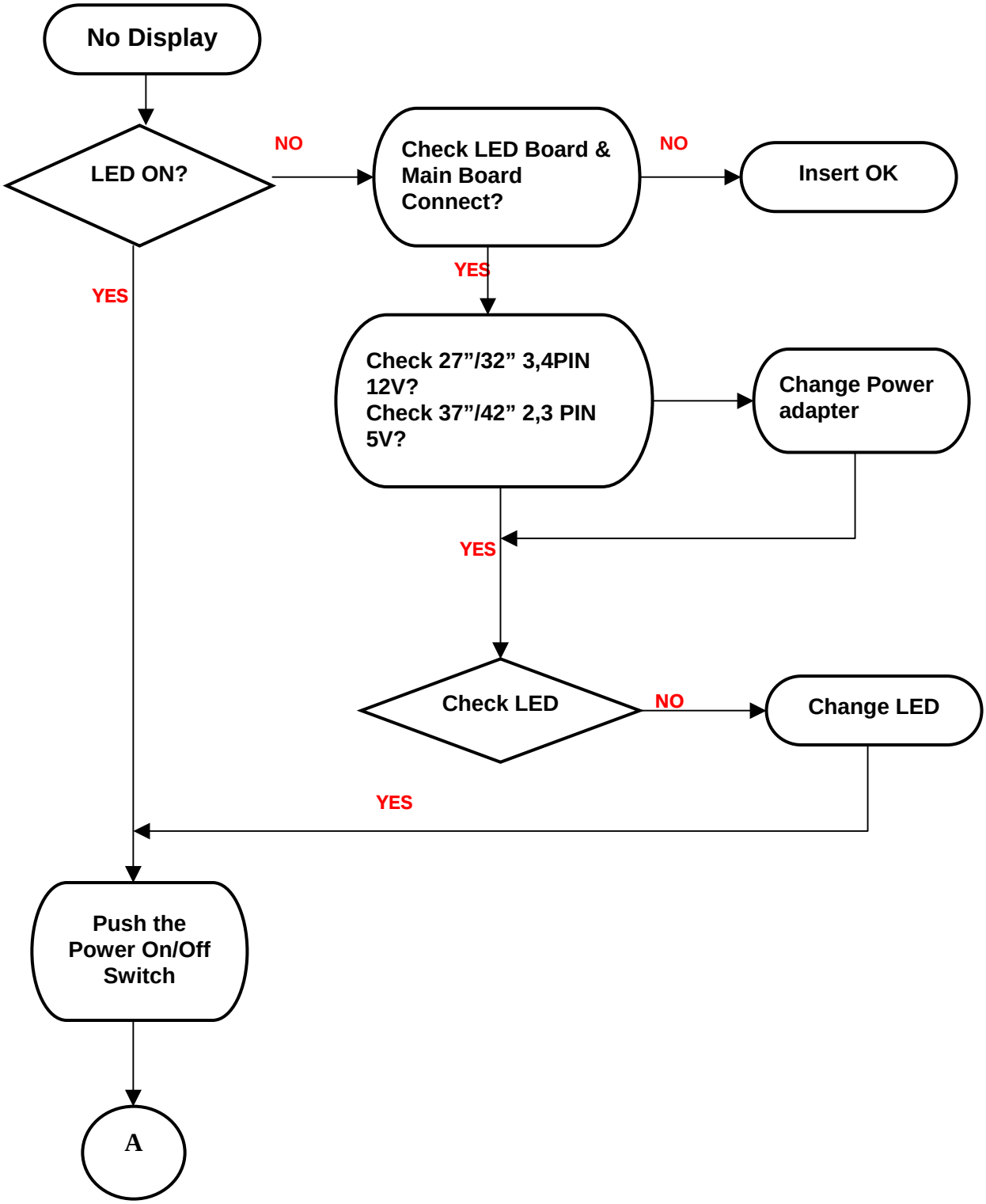
16	**NTSC/PAL/SECAM switch**	DVD S-Video Cable Video Cable FLUKE 54200	Play DVD test disc VIDEO ESSENTIA Set DVD to interlaced output	**1.** Select SOURCE then choose AV3（VIDEO） or AV4(S-VIDEO). **2.** Sending the signal from DVD test disc (sixth paragraph) **3.** Switch DVD to output mode from NTSC/PAL/SECAM, See if there is the action of switch NTSC/PAL/SECAM.
17	**480P/480i switch**	DVD Component Cable	Play DVD test disc VIDEO ESSENTIA Set the DVD to progressive output (P-SCAN)	1. Select SOURCE then choose AV3(HDTV) 2. Sending the signal from DVD test disc (sixth paragraph) 4. Switch DVD output mode between P-SCN ON/OFF 5. see if there is the action of switch mode on the screen.(480i/480p).
18	**Audio adjustment**	Pattern Generator Sound input External connect left-right trumpet(10W X2, 4 Ohm.)	Any Pattern	**1.** Select SOURCE **2.** Then press MENU KEY enter AUDIO adjustment item.
	a. Volume			1. Set the sound volume. 2. Check if the action is normal.
	b.Sound mode			1. Make sure the sound is normal under the Flat/Music/Movie/Speech/User 2. Check if the action is normal
	c.Surround			1. Make sure the surround is normal 2. Check if the action is normal

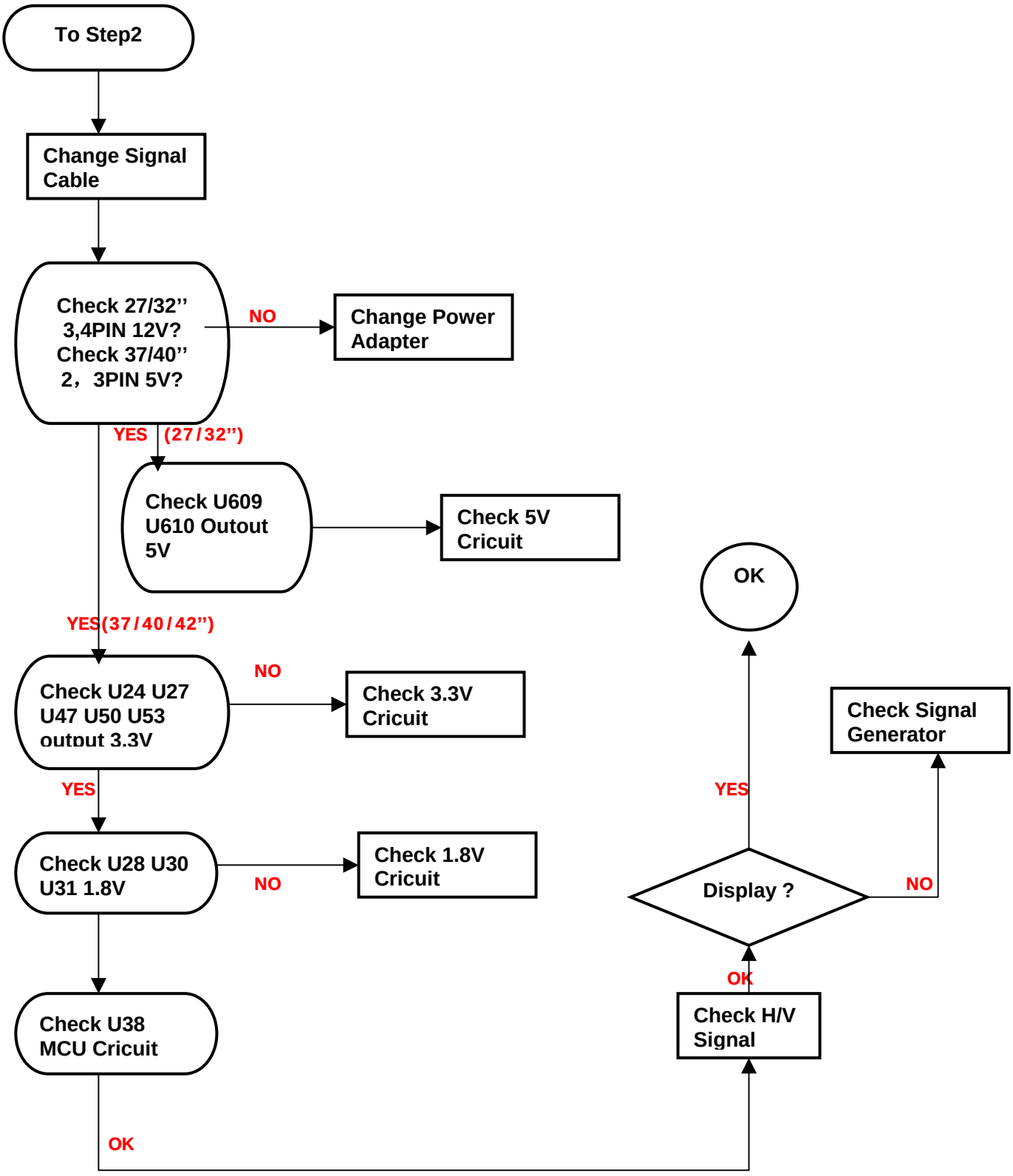
	d. Balance			1. Set the left/right speaker to be balance 2. Check if the action is normal.
	e.100Hz			1. Set the Bass volume 2. Check if the action is normal
	f.500Hz			1. Set the mediant volume 2. Check if the action is normal
	g.1.5KHz			1.Set the mediant volume 2.Check if the action is normal
	h.5KHz			1. Set theTreble volume 2. Check if the action is normal
	i.10KHz			1. Set theTreble volume 2. Check if the action is normal
	j.TV NICAM DUAL1/DUAL2 STERO, MONO			1. Press I-II key on the remote control to select the DUAL1/DUAL2/DUALI+II, STERO,MONO 2. Check if the action and sound are normal
19	**PIP/DW test**	PC DVD S-Video cable Video Cable Or TV SIGNAL /FLUKE54200		1. Selects the SOURCE to be TV, AV1,AV2,AV3,AV4,AV5,AV6 2. Press Menu key to select the PIP/DW menu item and select it to be On under the PIP mode 3. Check if the PIP/DW are normal under each source
20	**Language adjustment**			1. Select required language. 2. Defalt value is set to English or set upon clients' requirement.
21	**Remote control**	VGA TV Signal Generator DVD or VCD HDTV Player HDMI Player		Check if all function are right on each mode

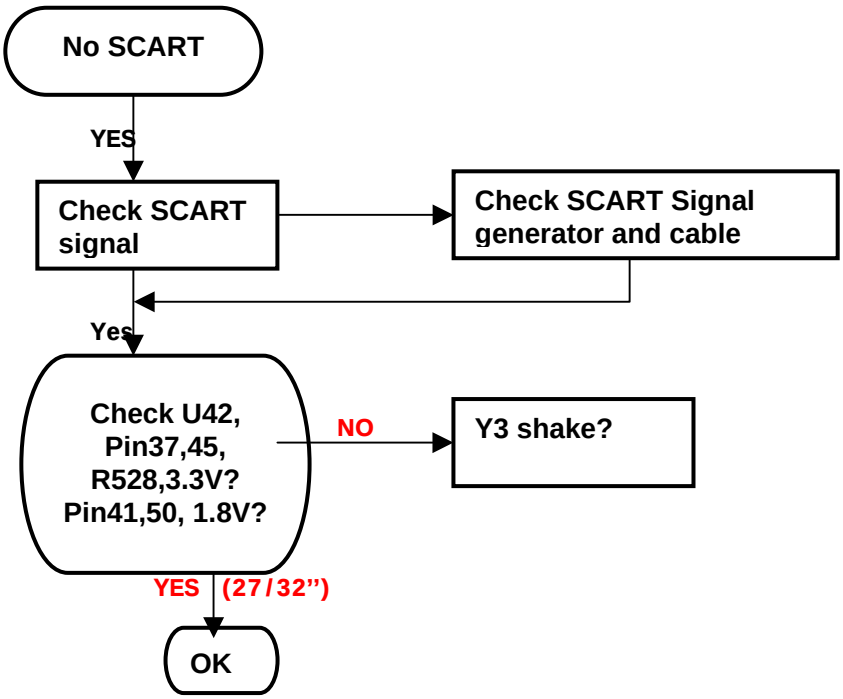
5. Trouble Shooting Flow Chart

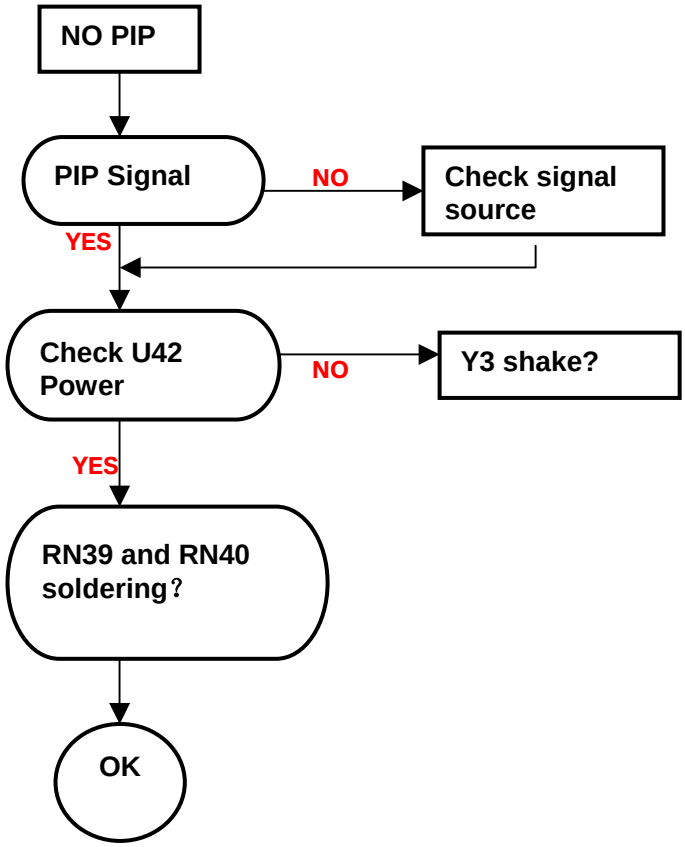
STEP 1.

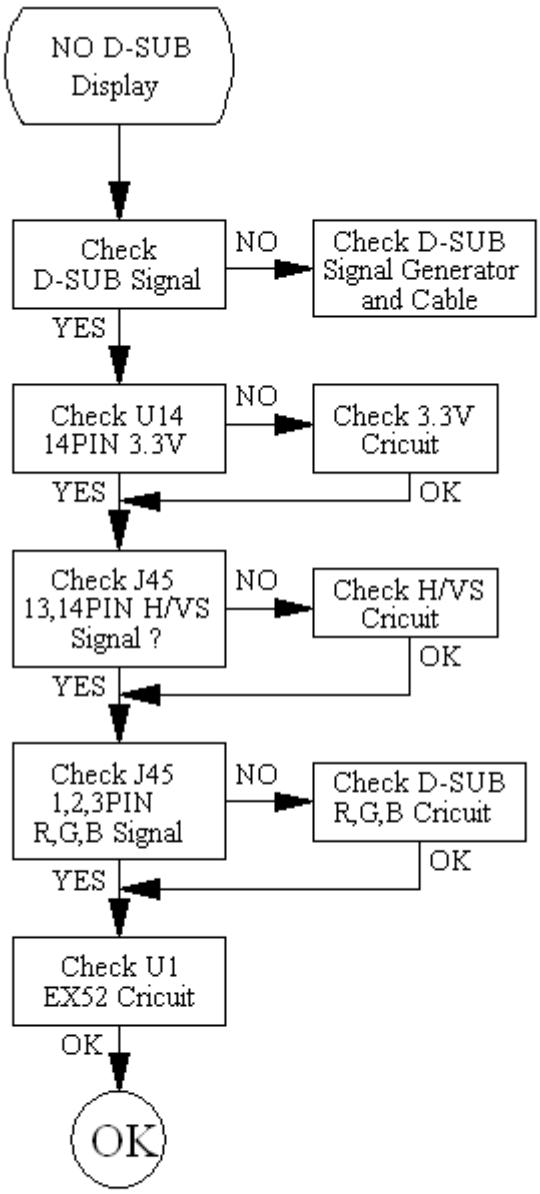


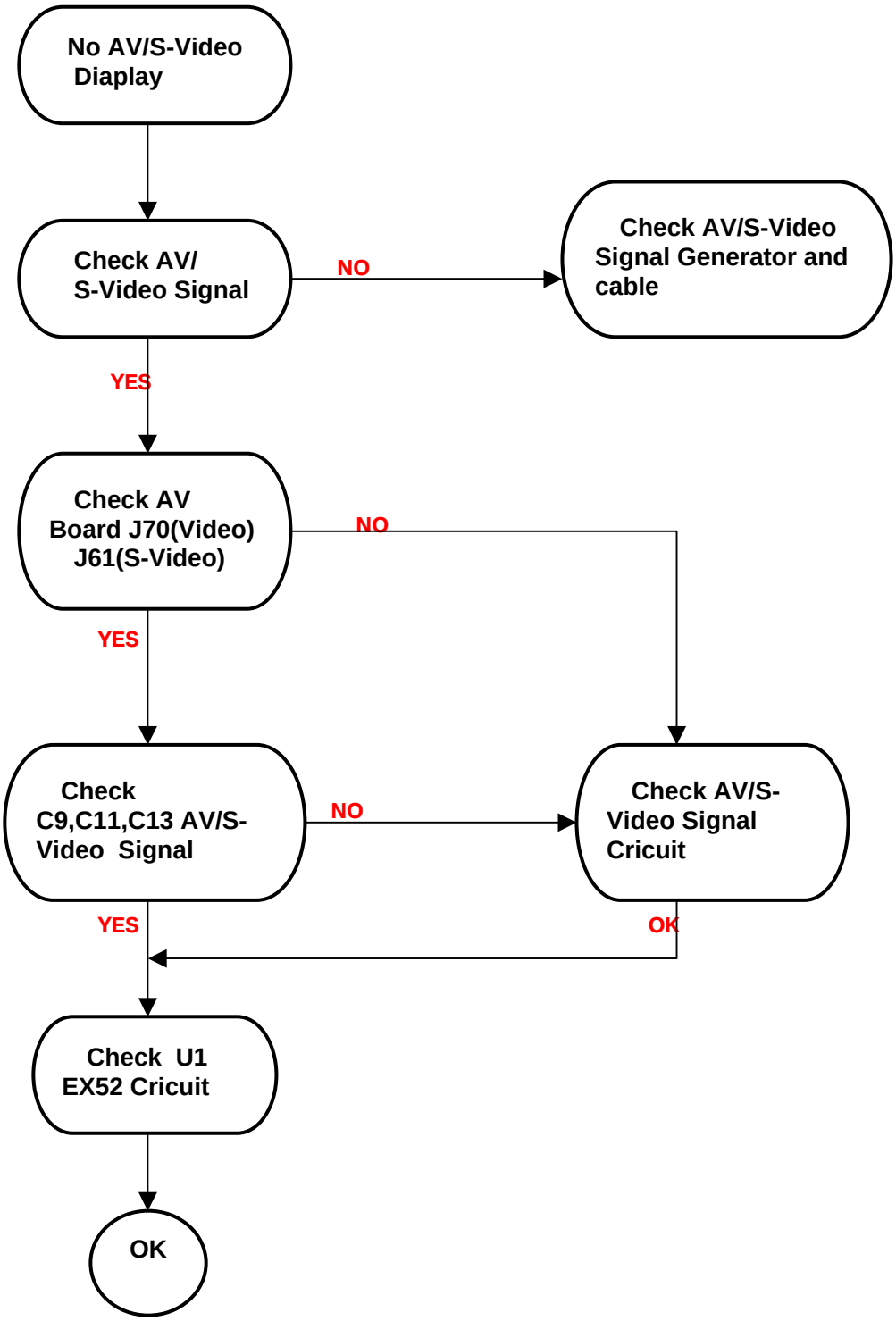

No Display
LED ON?
NO
Check LED Board & Main Board Connect?
NO
Insert OK
YES
YES
Check 27”/32” 3,4PIN 12V?
Check 37”/42” 2,3 PIN 5V?
Change Power adapter
YES
Check LED
NO
Change LED
YES
Push the Power On/Off Switch
A

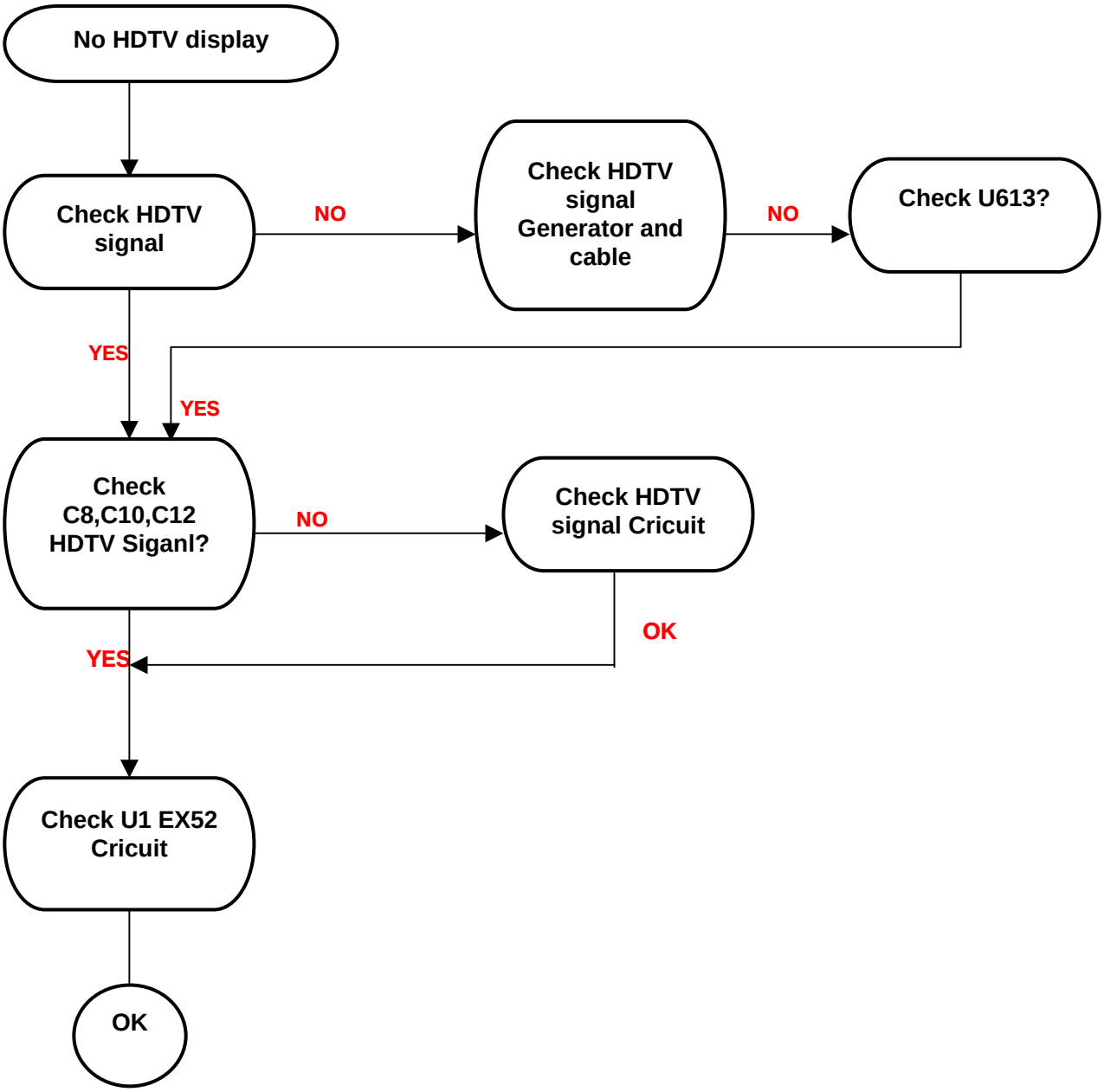

To Step2
Change Signal Cable
Check 27/32'' 3,4PIN 12V? Check 37/40'' 2，3PIN 5V?
NO
Change Power Adapter
YES (27/32'')
Check U609 U610 Outout 5V
Check 5V Cricuit
YES(37/40/42'')
Check U24 U27 U47 U50 U53 output 3.3V
NO
Check 3.3V Cricuit
YES
Check U28 U30 U31 1.8V
NO
Check 1.8V Cricuit
Check U38 MCU Cricuit
OK
OK
Check H/V Signal
OK
Display ?
NO
Check Signal Generator
YES

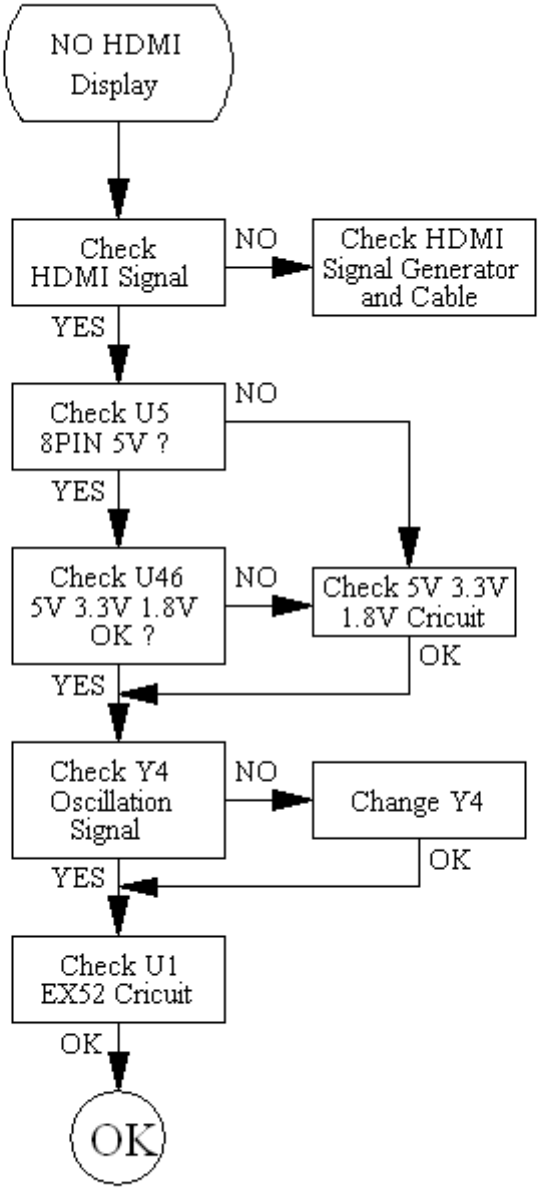

No SCART
YES
Check SCART signal
Check SCART Signal generator and cable
Yes
Check U42, Pin37,45, R528,3.3V? Pin41,50, 1.8V?
NO
Y3 shake?
YES
(27/32")
OK

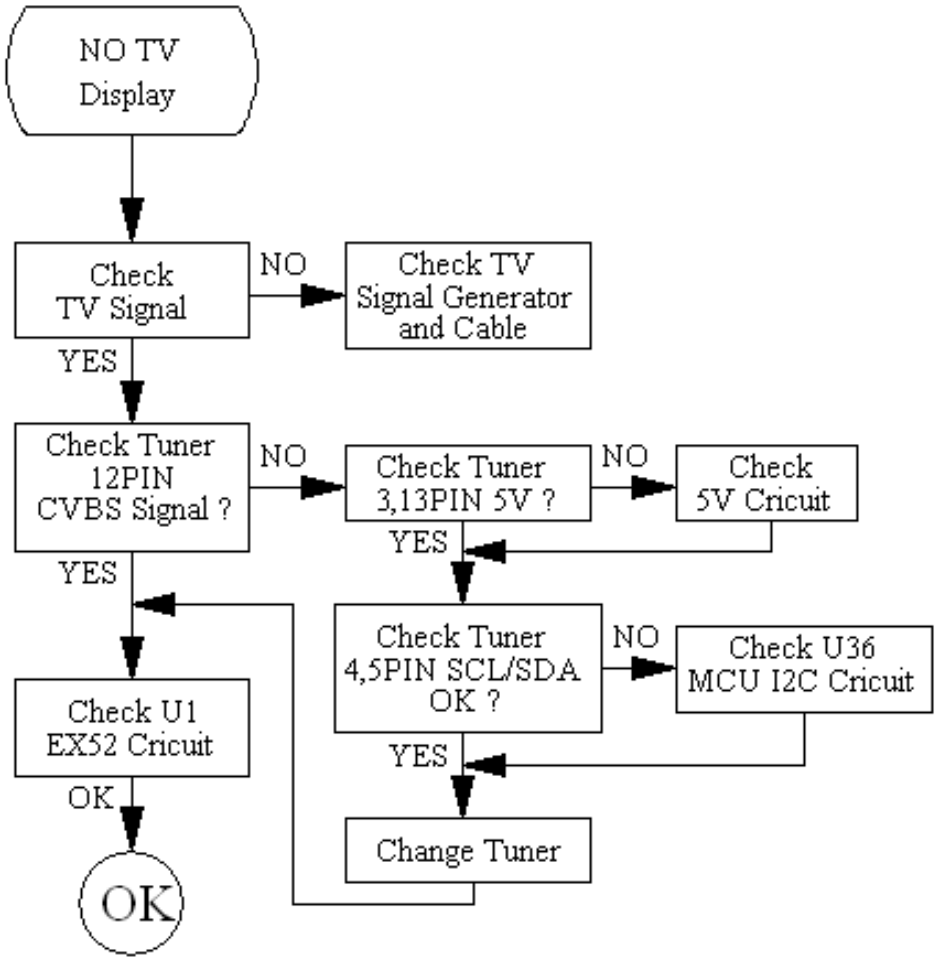

NO PIP
PIP Signal
NO
Check signal source
YES
Check U42 Power
NO
Y3 shake?
YES
RN39 and RN40 soldering?
OK

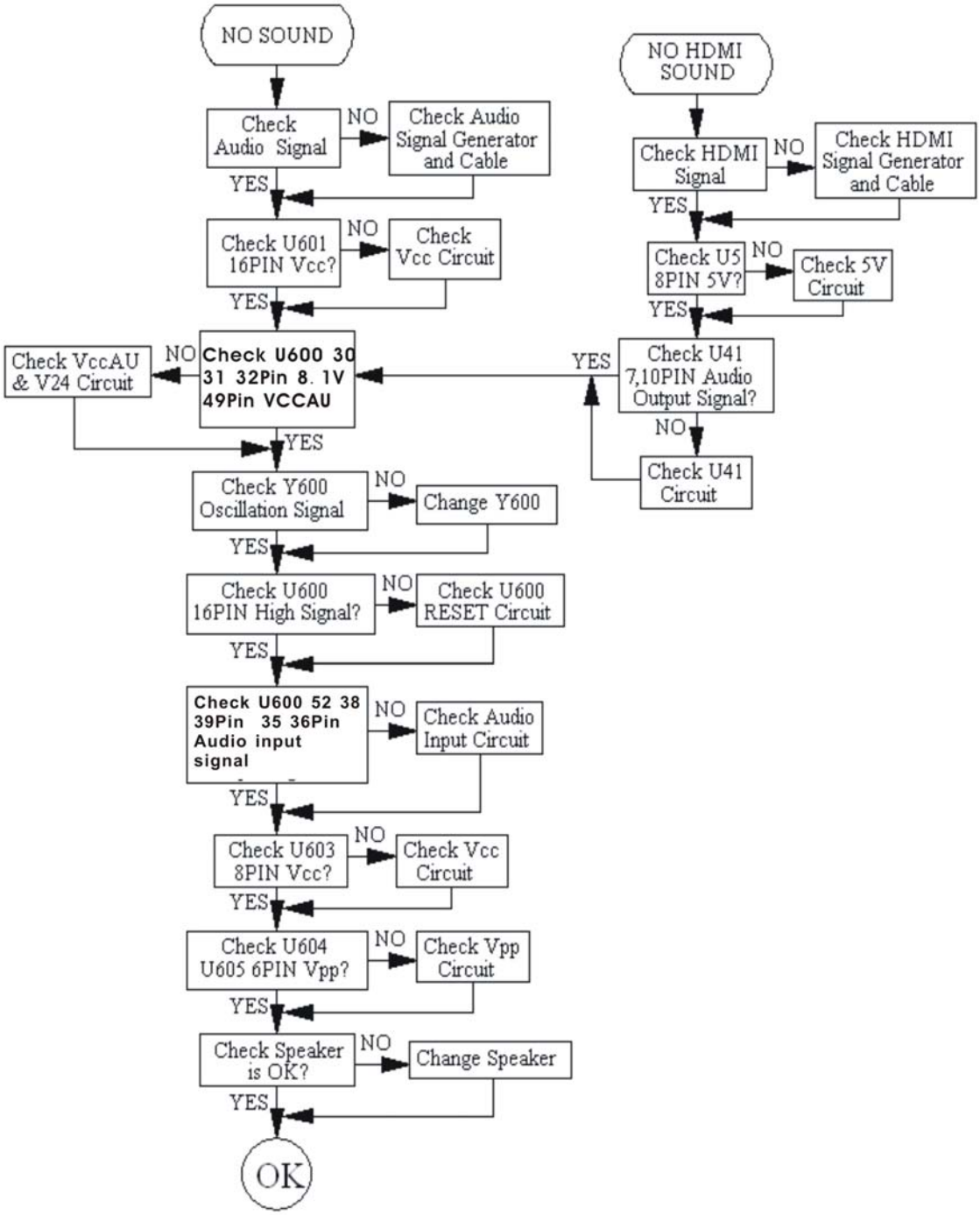

NO D-SUB Display
Check D-SUB Signal
NO
Check D-SUB Signal Generator and Cable
YES
Check U14 14PIN 3.3V
NO
Check 3.3V Cricuit
YES
OK
Check J45 13,14PIN H/VS Signal ?
NO
Check H/VS Cricuit
YES
OK
Check J45 1,2,3PIN R,G,B Signal
NO
Check D-SUB R,G,B Cricuit
YES
OK
Check U1 EX52 Cricuit
OK
OK


No AV/S-Video Diaplay
Check AV/ S-Video Signal
NO
Check AV/S-Video Signal Generator and cable
YES
Check AV Board J70(Video) J61(S-Video)
NO
YES
Check C9,C11,C13 AV/S-Video Signal
NO
Check AV/S-Video Signal Cricuit
YES
OK
Check U1 EX52 Cricuit
OK


No HDTV display
Check HDTV signal
NO
Check HDTV signal Generator and cable
NO
Check U613?
YES
YES
Check C8,C10,C12 HDTV Siganl?
NO
Check HDTV signal Cricuit
OK
YES
Check U1 EX52 Cricuit
OK

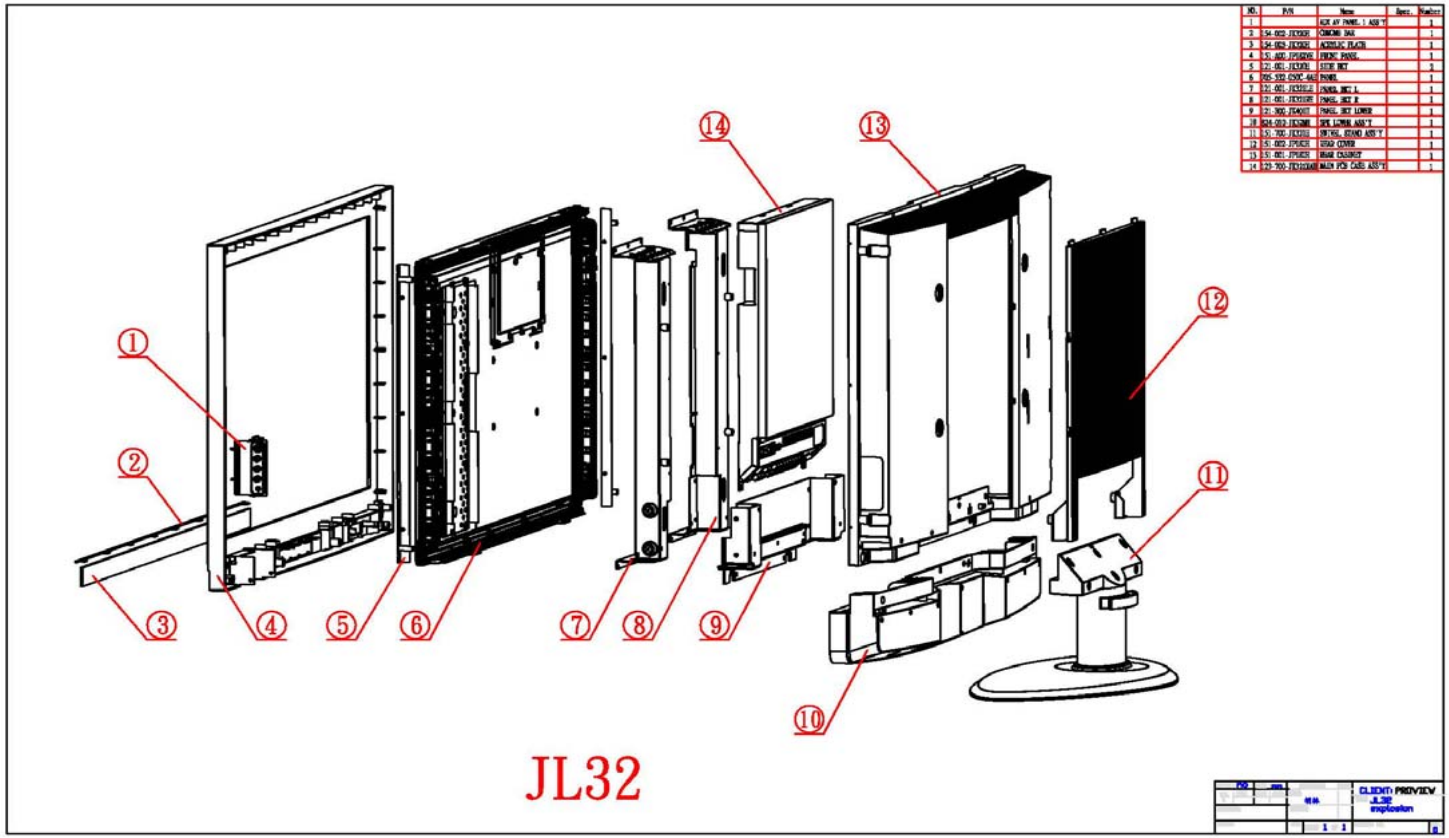

NO HDMI Display
Check HDMI Signal
NO
Check HDMI Signal Generator and Cable
YES
Check U5 8PIN 5V ?
NO
YES
Check U46 5V 3.3V 1.8V OK ?
NO
Check 5V 3.3V 1.8V Cricuit
OK
YES
Check Y4 Oscillation Signal
NO
Change Y4
OK
YES
Check U1 EX52 Cricuit
OK
OK


NO TV
Display
Check
TV Signal
NO
Check TV
Signal Generator
and Cable
YES
Check Tuner
12PIN
CVBS Signal ?
NO
Check Tuner
3,13PIN 5V ?
NO
Check
5V Cricuit
YES
YES
Check Tuner
4,5PIN SCL/SDA
OK ?
NO
Check U36
MCU I2C Cricuit
Check U1
EX52 Cricuit
YES
OK
Change Tuner
OK

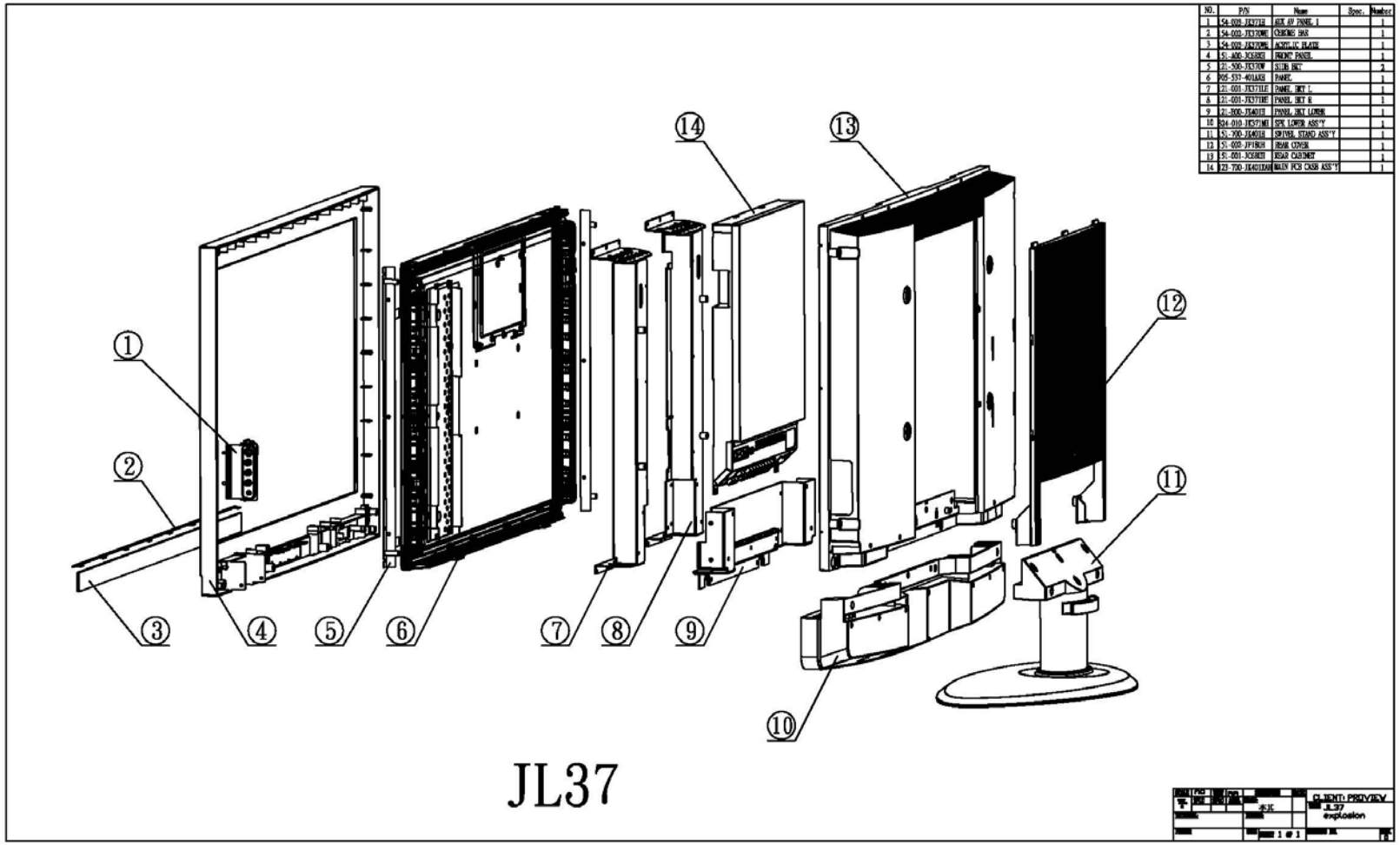

NO SOUND
Check Audio Signal
NO
Check Audio Signal Generator and Cable
YES
Check U601 16PIN Vcc?
NO
Check Vcc Circuit
YES
Check VccAU & V24 Circuit
NO
Check U600 30 31 32Pin 8. 1V 49Pin VCCAU
YES
Check Y600 Oscillation Signal
NO
Change Y600
YES
Check U600 16PIN High Signal?
NO
Check U600 RESET Circuit
YES
Check U600 52 38 39Pin 35 36Pin Audio input signal
NO
Check Audio Input Circuit
YES
Check U603 8PIN Vcc?
NO
Check Vcc Circuit
YES
Check U604 U605 6PIN Vpp?
NO
Check Vpp Circuit
YES
Check Speaker is OK?
NO
Change Speaker
YES
OK
NO HDMI SOUND
Check HDMI Signal
NO
Check HDMI Signal Generator and Cable
YES
Check U5 8PIN 5V?
NO
Check 5V Circuit
YES
Check U41 7,10PIN Audio Output Signal?
YES
NO
Check U41 Circuit

6. Exploded Diagram and Spare Parts List

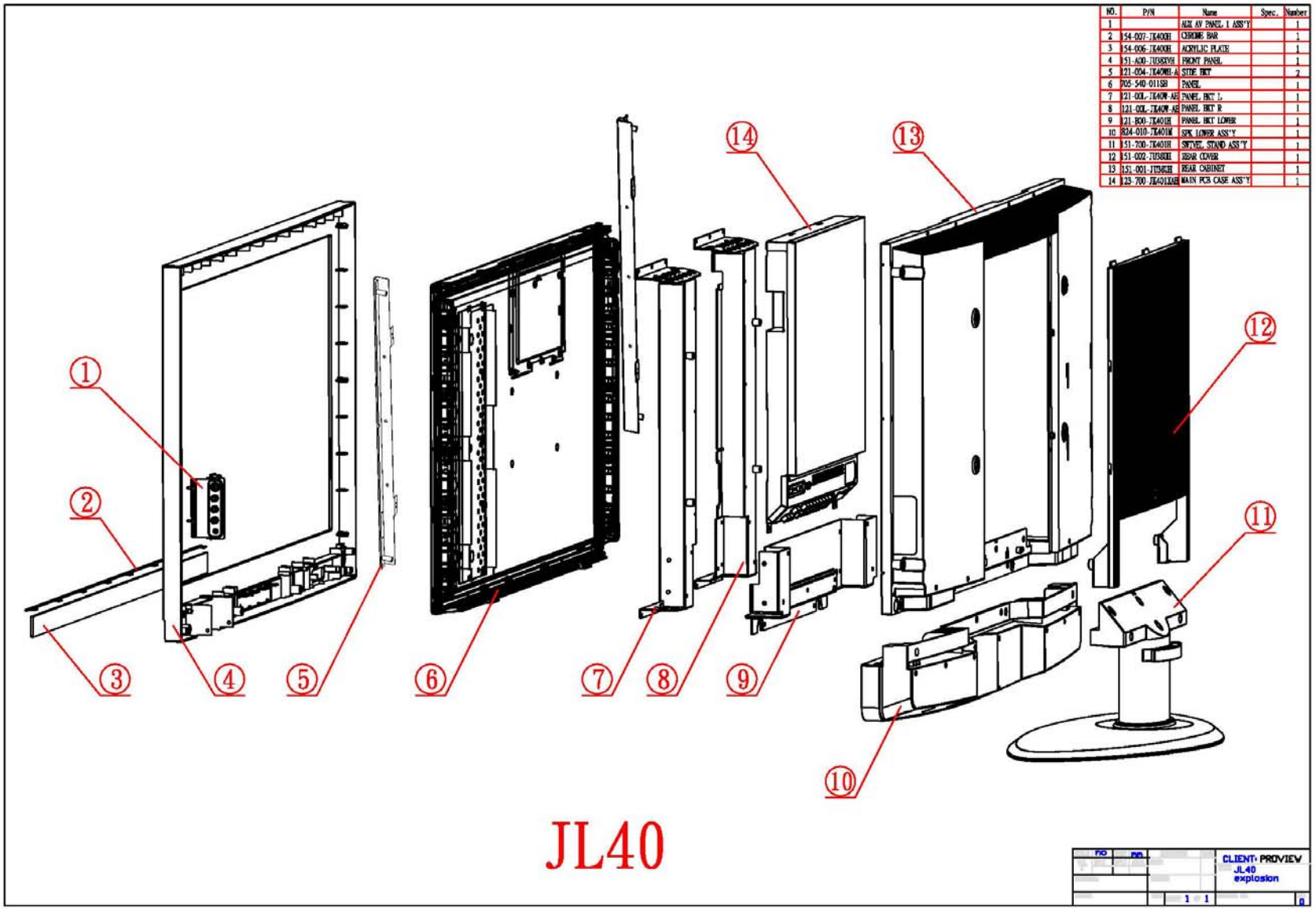
JL328



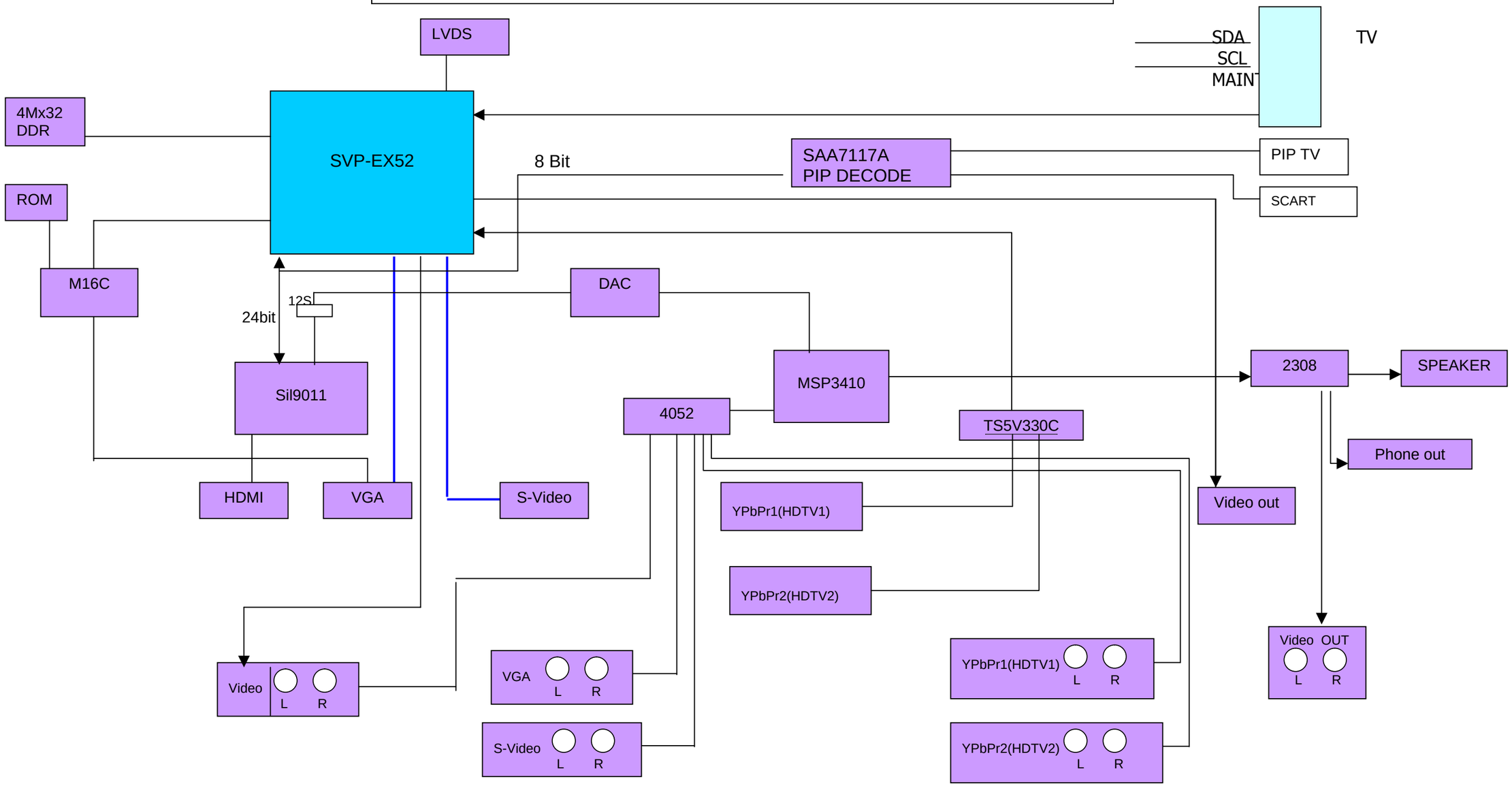
JL378



JL408

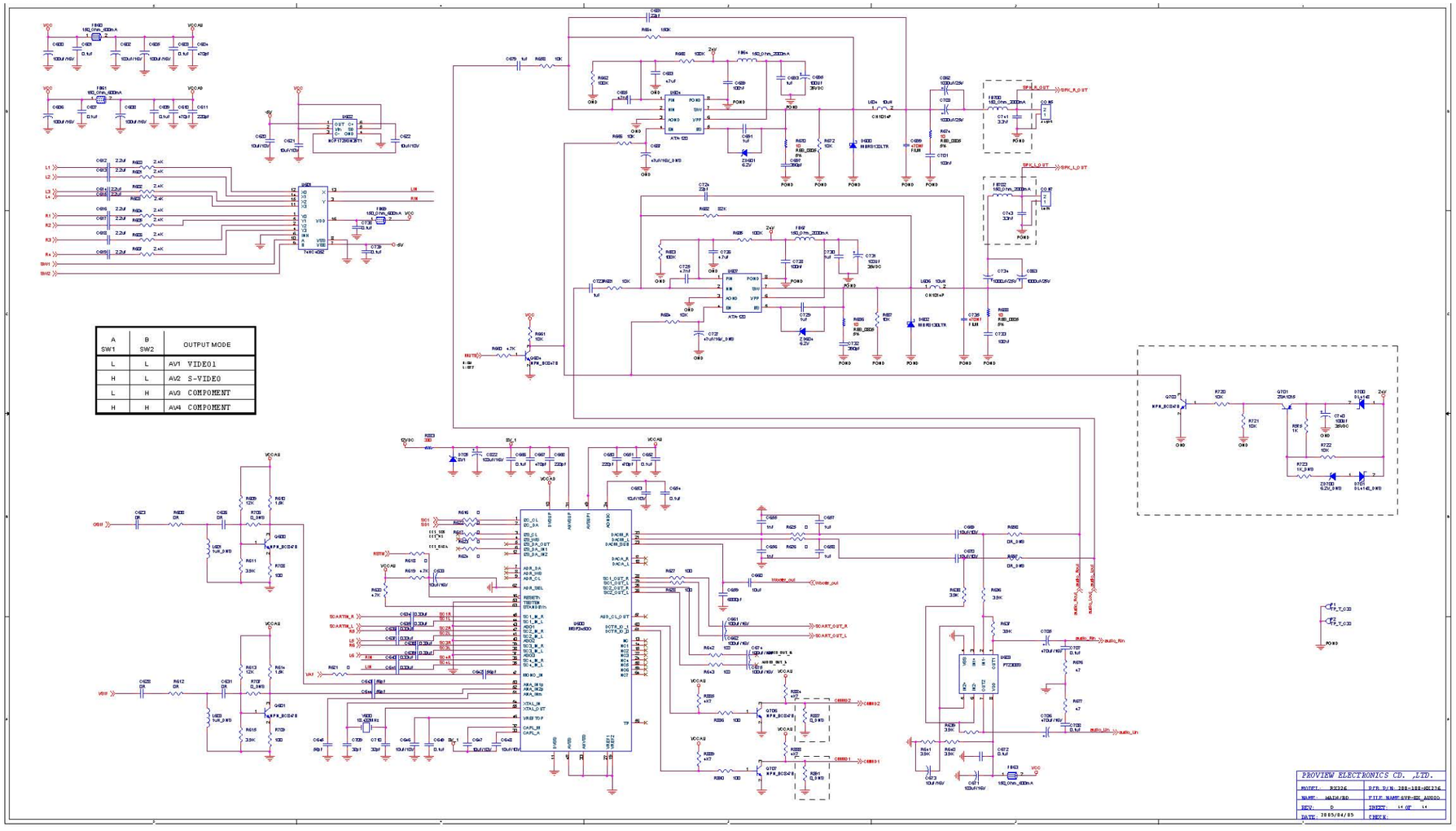

NO. P/N Name Spec. Number
1 ASS'Y 1
2 154-007-JL400H CHROME BAR 1
3 154-006-JL400H ACRYLIC PLATE 1
4 151-A00-JU58XXH FRONT PANEL 1
5 121-004-JL40WH-A SIDE BKT 2
6 705-540-011SH PANEL 1
7 121-00L-JL40W-AS PANEL BKT L 1
8 121-00L-JL40W-AS PANEL BKT R 1
9 121-B00-JL401H PANEL BKT LOWER 1
10 824-010-JL401M SPK LOWER ASS'Y 1
11 151-700-JL401H SWIVEL STAND ASS'Y 1
12 151-002-JU58XH REAR COVER 1
13 151-001-JU58XH REAR CABINET 1
14 123-700-JL401XAH MAIN PCB CASE ASS'Y 1
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
JL40
CLIENT: PROVIEW
JL40
explosion

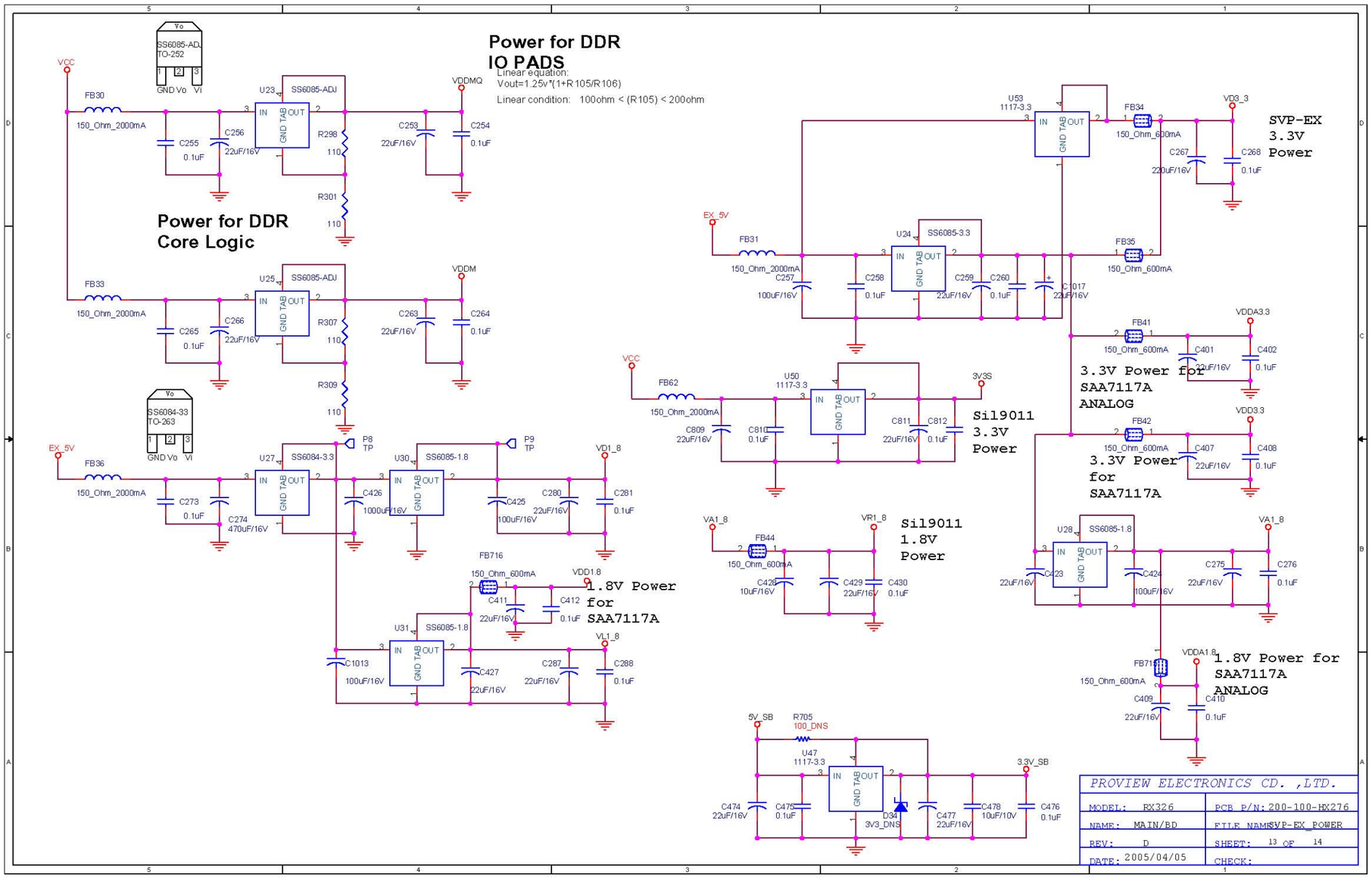
7. Block Diagram

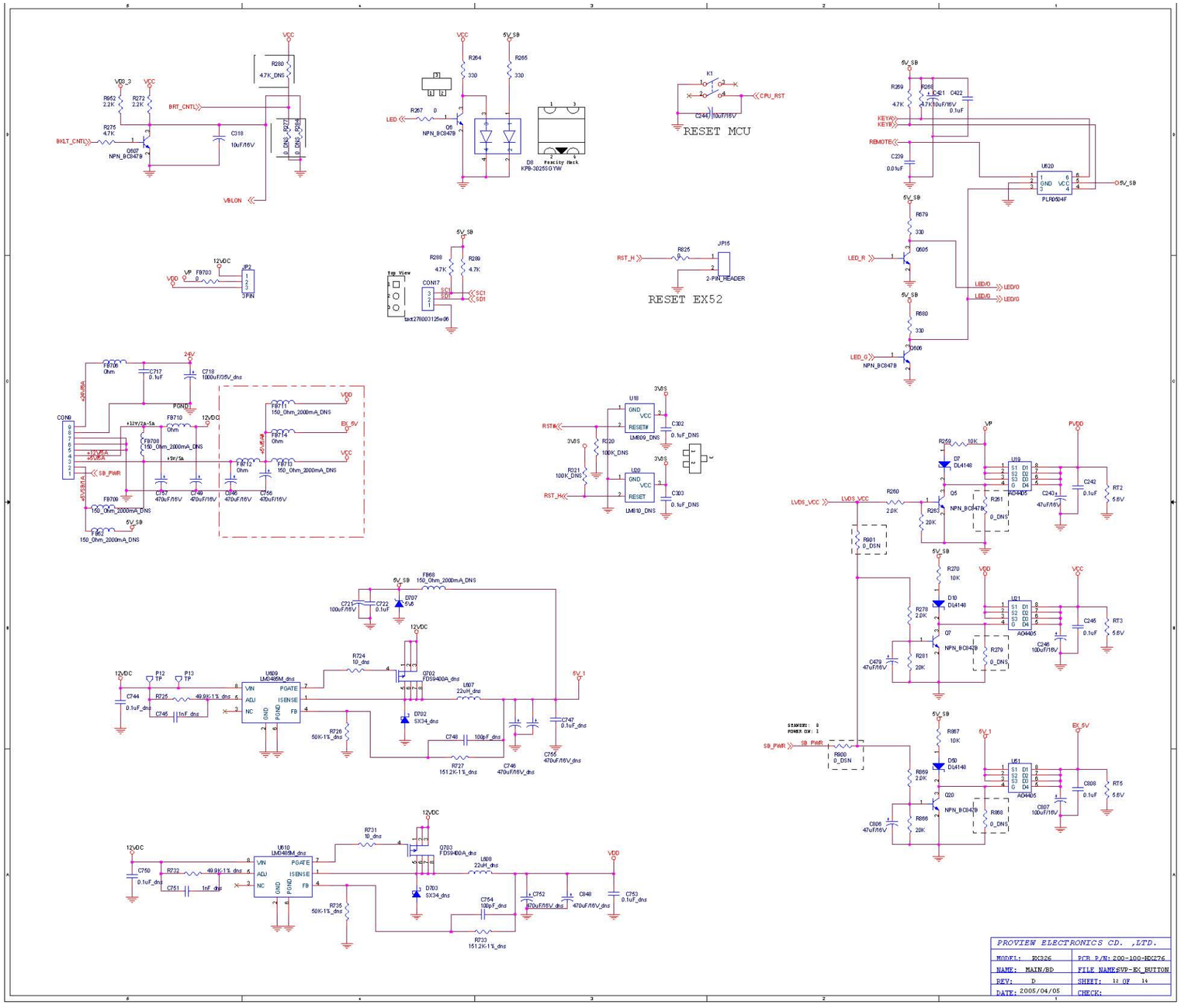


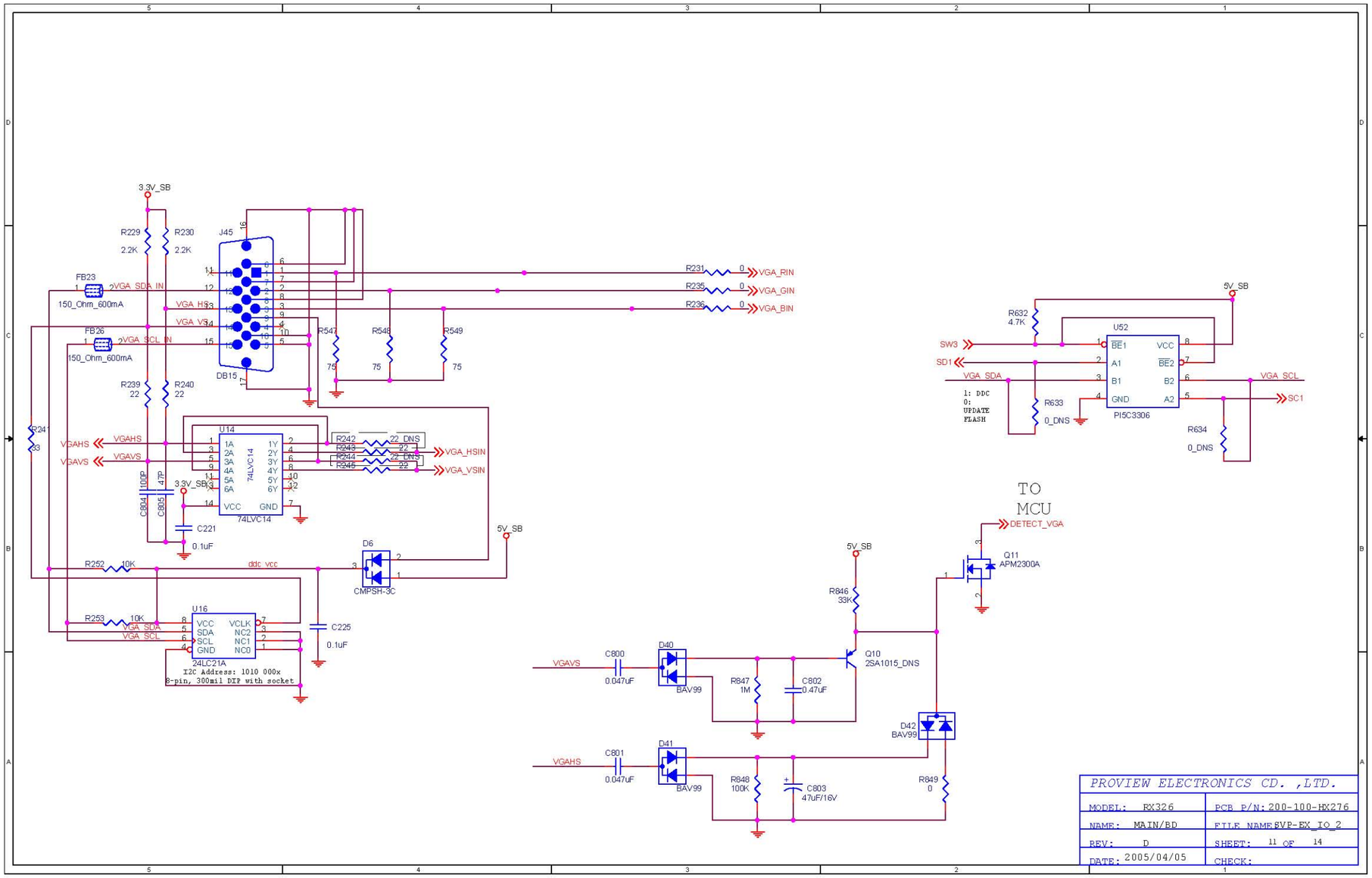
8. Schematic Diagram

Main Board




Power for DDR
IO PADS
Linear equation:
Vout=1.25v*(1+R105/R106)
Linear condition: 100ohm < (R105) < 200ohm
Power for DDR
Core Logic
SVP-EX
3.3V
Power
3.3V Power for
SAA7117A
ANALOG
Sil9011
3.3V
Power
3.3V Power
for
SAA7117A
Sil9011
1.8V
Power
1.8V Power
for
SAA7117A
1.8V Power for
SAA7117A
ANALOG
PROVIEW ELECTRONICS CD. ,LTD.
MODEL: RX326
PCB P/N:200-100-HX276
NAME: MAIN/BD
FILE NAME:SVP-EX_POWER
REV: D
SHEET: 13 OF 14
DATE: 2005/04/05
CHECK:


RESET MCU
RESET EX52
PROVIEW ELECTRONICS CO. ,LTD.
MODEL: EX326
PCB P/N: 200-100-HDX276
NAME: MAIN/BD
FILE NAME:SVP-EX_BUTTON
REV: D
SHEET: 12 OF 14
DATE: 2005/04/05
CHECK:


3.3V_SB
R229 2.2K
R230 2.2K
J45
DB15
FB23
150_Ohm_600mA
2VGA_SDA_IN
VGA_HS
VGA_VS
FB26
150_Ohm_600mA
2VGA_SCL_IN
R231 0 VGA_RIN
R235 0 VGA_GIN
R236 0 VGA_BIN
R547 75
R548 75
R549 75
10n
R239 22
R240 22
R241 33
VGAHS
VGAVS
U14
74LVC14
R242 22_DNS
R243 22
R244 22_DNS
R245 22
VGA_HSIN
VGA_VSIN
C804 100P
C805 47P
C221 0.1uF
5V_SB
D6 CMPSH-3C
R252 10K
ddc_vcc
R253 10K
VGA_SDA
VGA_SCL
U16
24LC21A
I2C Address: 1010 000x
8-pin, 300mil DIP with socket
C225 0.1uF
R632 4.7K
SW3
SD1
VGA_SDA
1: DDC
0: UPDATE FLASH
R633 0_DNS
U52
PI5C3306
VGA_SCL
SC1
R634 0_DNS
TO MCU
DETECT_VGA
Q11 APM2300A
R846 33K
Q10 2SA1015_DNS
VGAVS
C800 0.047uF
D40 BAV99
R847 1M
C802 0.47uF
D42 BAV99
VGAHS
C801 0.047uF
D41 BAV99
R848 100K
C803 47uF/16V
R849 0
PROVIEW ELECTRONICS CD. ,LTD.
MODEL: RX326
PCB P/N:200-100-HX276
NAME: MAIN/BD
FILE NAME:SVP-EX_IO_2
REV: D
SHEET: 11 OF 14
DATE: 2005/04/05
CHECK:

SW6	OUTPUT MODE
H	AV4 Y, Pb, PR
L	AV5 Y, Pb, PR

SW12	SW11	SW10	CVBS IN
0	0	0	S1_V
0	0	⊥	S2_V
0	⊥	0	S3_V
0	⊥	⊥	CVBS
⊥	0	0	TV_MAIN
⊥	0	⊥	TV_PIP
⊥	⊥	⊥	nc

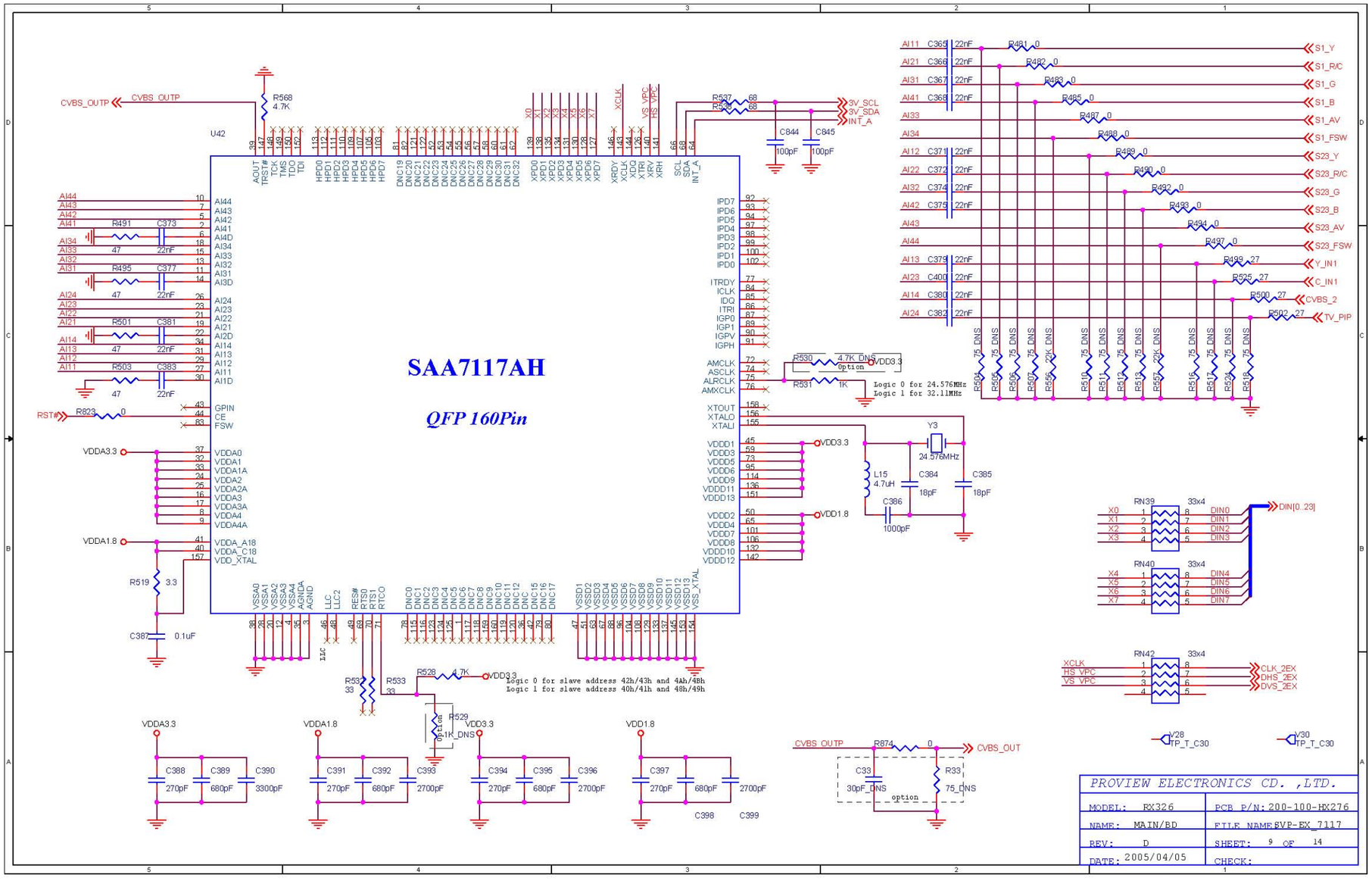
12/01 Modified by Kenny

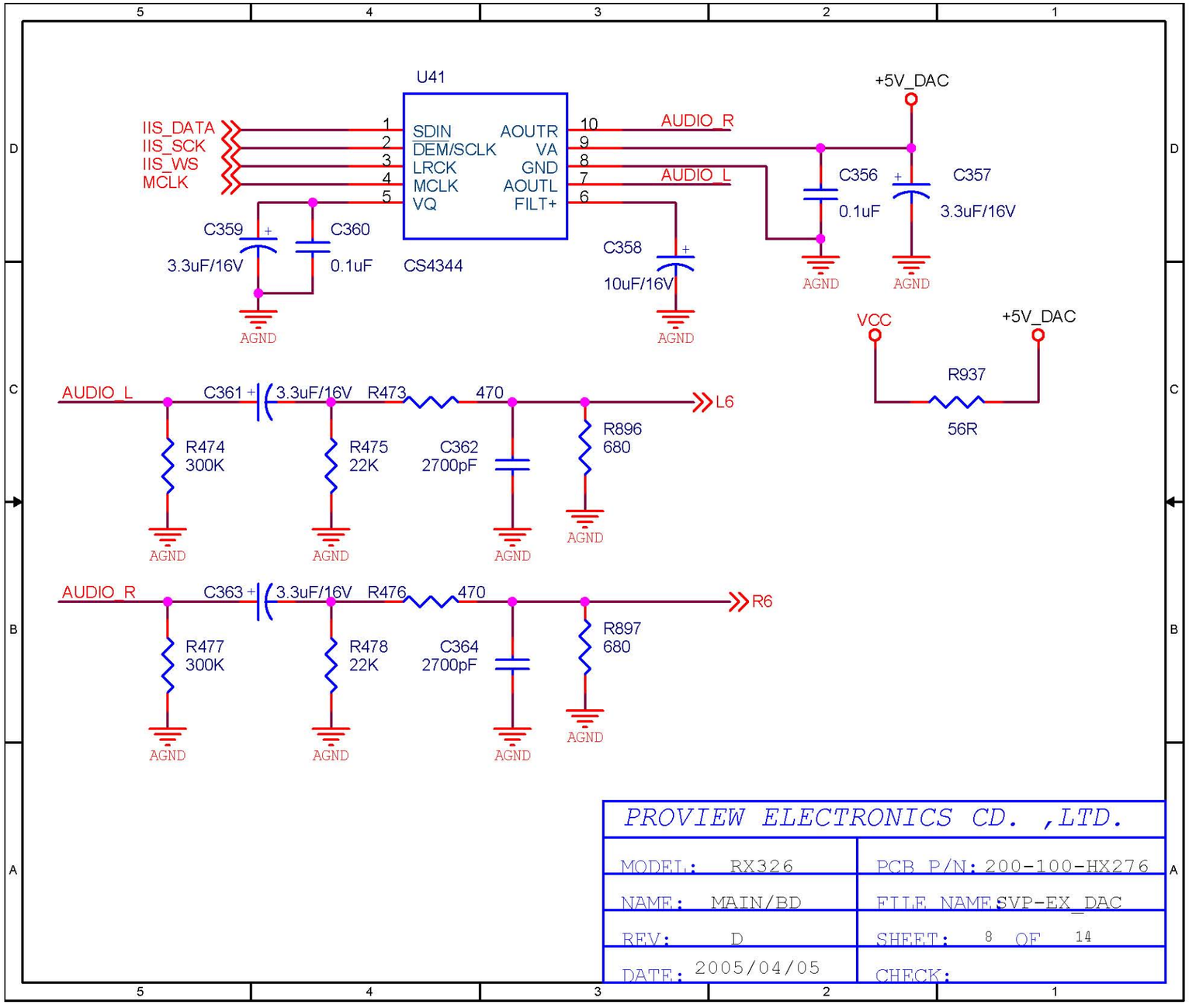
SW13	SW12	AudioZ
0	0	SCART1
0	⊥	SCART2
⊥	0	SCART3
⊥	⊥	nc

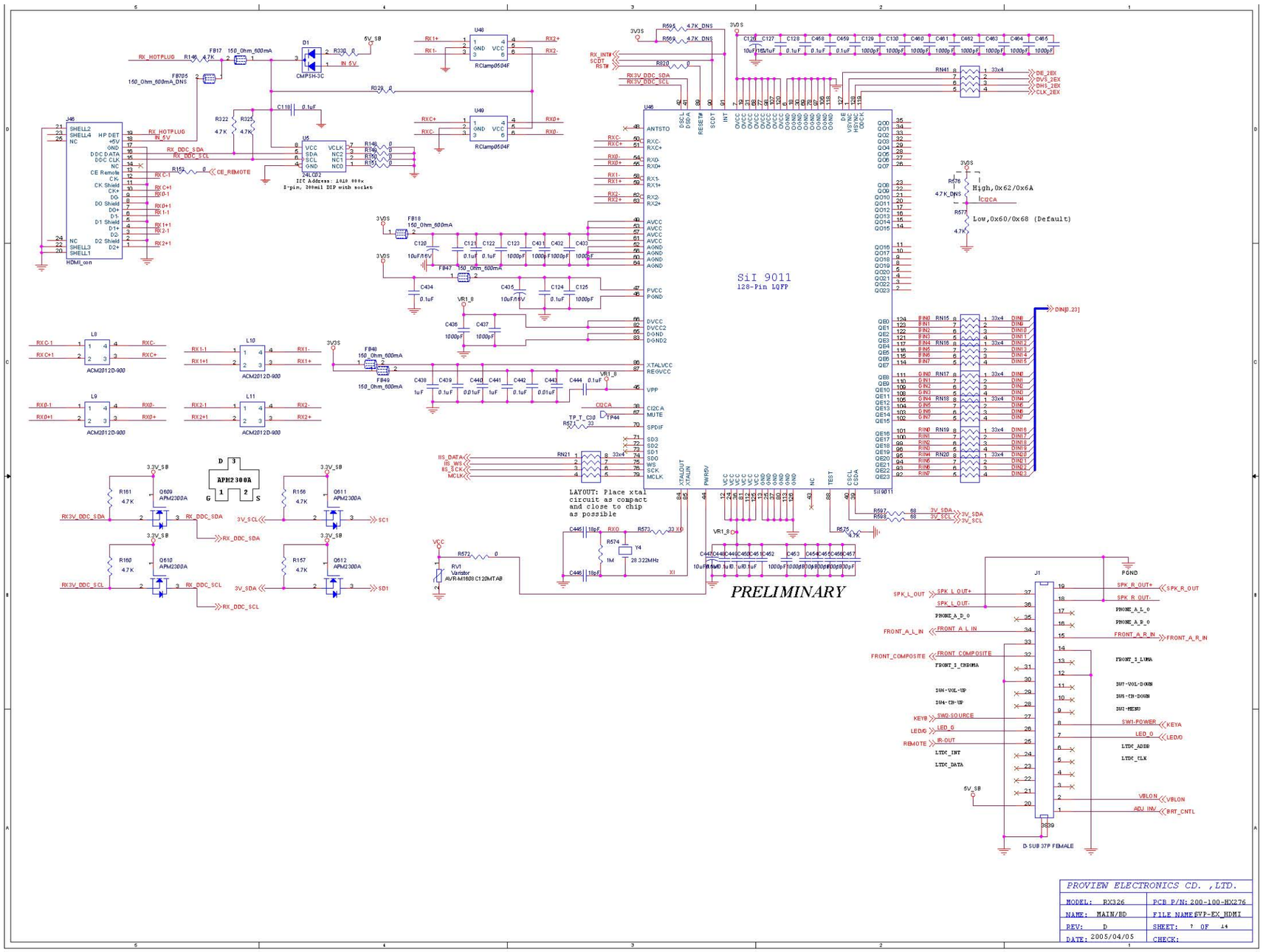
12/01 Modified by Kenny

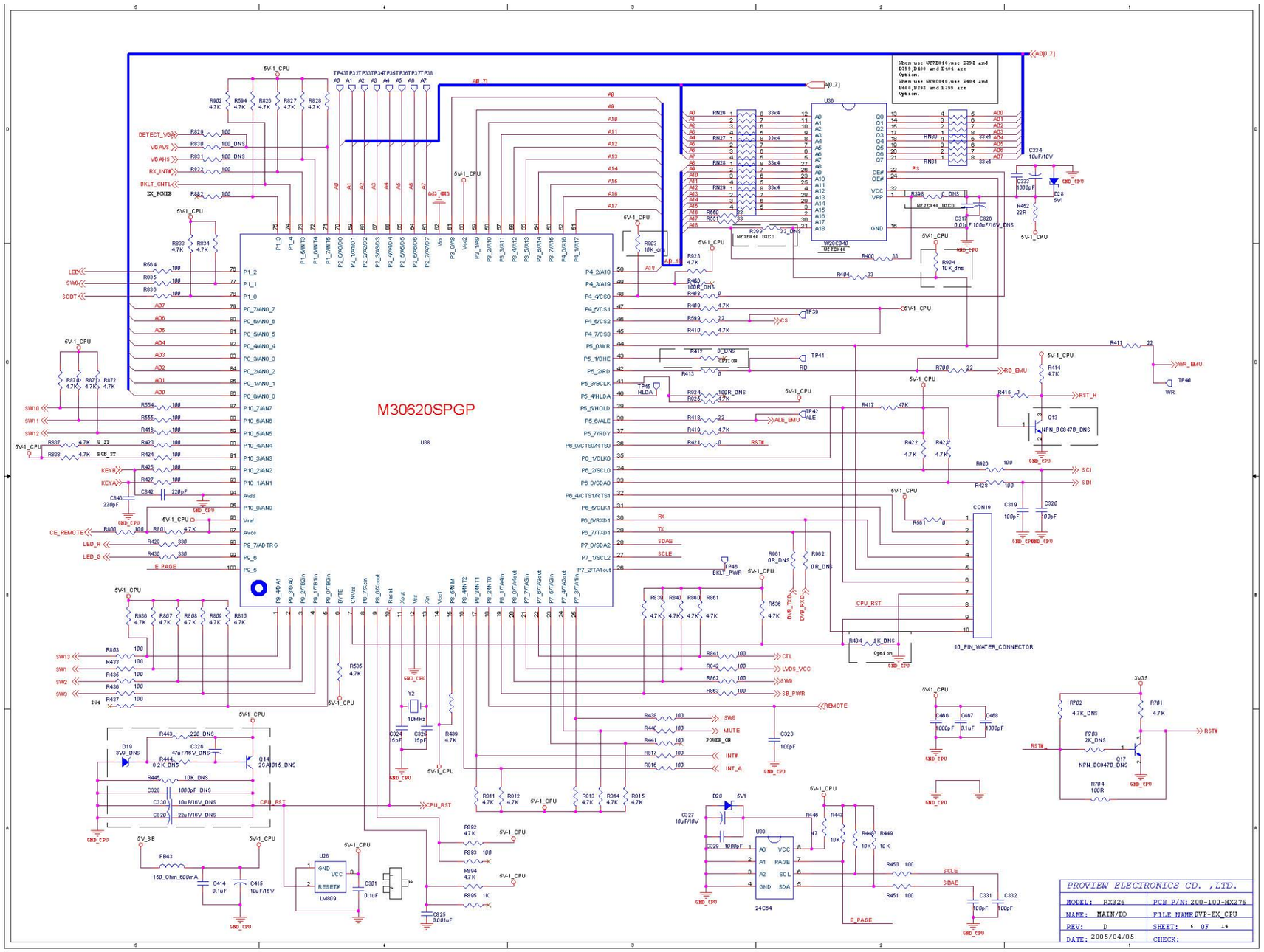
PROVIEW ELECTRONICS CO. ,LTD.

MODEL:	RX326	PCB P/N:	200-100-HX276
NAME:	MAIN/BD	FILE NAME:	SVP-EX_I0_1
REV:	D	SHEET:	11 OF 14
DATE:	2005/04/05	CHECK:	


SAA7117AH
QFP 160Pin
CVBS_OUTP
R568 4.7K
U42
3V_SCL
3V_SDA
INT_A
C844 100pF
C845 100pF
R537 68
R538 68
S1_Y
S1_R/C
S1_G
S1_B
S1_AV
S1_FSW
S23_Y
S23_R/C
S23_G
S23_B
S23_AV
S23_FSW
Y_IN1
C_IN1
CVBS_2
TV_PIP
R530 4.7K_DNS option
R531 1K
Logic 0 for 24.576MHz
Logic 1 for 32.11MHz
Y3 24.576MHz
L15 4.7uH
C384 18pF
C385 18pF
C386 1000pF
VDD3.3
VDD1.8
RST#
R823 0
GPIN
CE
FSW
VDDA3.3
VDDA1.8
R519 3.3
C387 0.1uF
RN39 33x4
RN40 33x4
DIN[0..23]
RN42 33x4
XCLK
HS_VPC
VS_VPC
CLK_2EX
DHS_2EX
DVS_2EX
R528 4.7K
R533 33
R529 1K_DNS option
Logic 0 for slave address 42h/43h and 4Ah/4Bh
Logic 1 for slave address 40h/41h and 48h/49h
C388 270pF
C389 680pF
C390 3300pF
C391 270pF
C392 680pF
C393 2700pF
C394 270pF
C395 680pF
C396 2700pF
C397 270pF
C398
C399
CVBS_OUTP
R874 0
CVBS_OUT
C33 30pF_DNS
R33 75_DNS
option
Y28 TP_T_C30
Y30 TP_T_C30
PROVIEW ELECTRONICS CD. ,LTD.
MODEL: RX326
PCB P/N:200-100-HX276
NAME: MAIN/BD
FILE NAME:VP-EX_7117
REV: D
SHEET: 9 OF 14
DATE: 2005/04/05
CHECK:


U41
IIS_DATA
IIS_SCK
IIS_WS
MCLK
SDIN
DEM/SCLK
LRCK
MCLK
VQ
AOUTR
VA
GND
AOUTL
FILT+
CS4344
AUDIO_R
AUDIO_L
+5V_DAC
C356
0.1uF
C357
3.3uF/16V
C358
10uF/16V
C359
3.3uF/16V
C360
0.1uF
AGND
VCC
R937
56R
AUDIO_L
C361
3.3uF/16V
R473
470
L6
R474
300K
R475
22K
C362
2700pF
R896
680
AUDIO_R
C363
3.3uF/16V
R476
470
R6
R477
300K
R478
22K
C364
2700pF
R897
680
PROVIEW ELECTRONICS CD. ,LTD.
MODEL: RX326
PCB P/N: 200-100-HX276
NAME: MAIN/BD
FILE NAME SVP-EX_DAC
REV: D
SHEET: 8 OF 14
DATE: 2005/04/05
CHECK:


SiI 9011
128-Pin LQFP
HDMI_con
CMPSH-3C
RClamp0504F
RClamp0504F
ACM2012D-900
ACM2012D-900
ACM2012D-900
ACM2012D-900
APM2300A
APM2300A
APM2300A
APM2300A
LAYOUT: Place xtal circuit as compact and close to chip as possible
PRELIMINARY
D-SUB 37P FEMALE
PROVIEW ELECTRONICS CO. , LTD.
MODEL: RX326
PCB P/N: 200-100-HX276
NAME: MAIN/BD
FILE NAME: EVP-EX_HDMI
REV: D
SHEET: 7 OF 14
DATE: 2005/04/05
CHECK:


M30620SPGP
U38
When use W27E040,use D295 and D399,D400 and D404 are Option.
When use W29C040,use D404 and D400,D295 and D399 are Option.
W29C040
W27E040
PROVIEW ELECTRONICS CO. ,LTD.
MODEL: RX326
PCB P/N:200-100-HX276
NAME: MAIN/BD
FILE NAME:EVP-EX_CPU
REV: D
SHEET: 6 OF 14
DATE: 2005/04/05
CHECK:

Test pads for DDR

MCLK0 TP7 TP_T_C30
DDQS TP8 TP_T_C30
DQM0 TP9 TP_T_C30
DQ23 TP10 TP_T_C30
CAS# TP11 TP_T_C30
RAS# TP12 TP_T_C30
CS0# TP13 TP_T_C30
TP14 TP_T_C30
TP15 TP_T_C30
TP16 TP_T_C30
WE# TP31 TP_T_C30

MA[0..11] → MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8 MA9 MA10 MA11
BA1 BA0 CS0# RAS# CAS# WE# CLKE MCLK0 MCLK0#
DQM[0..3]

U2

K4D263238F-QC50

4M x 32 DDR

TQFP 100Pin

DQS2 15 R126 DDQS 94 DQS
DQM1 23 DM0
DQM0 24 DM2
DQM2 57 DM3
DQM3 56 DM1
VREF 58 ← MVREF
VSSQ: 5 11 19 62 70 76 82 92 99
VDDQ: 2 8 14 22 59 67 73 79 86 95 → VDDMQ
VSS: 16 46 66 85
NC_38 NC_39 NC_40 NC_41 NC_42 NC_43 NC_44 NC_52 NV_87 NV_88 NV_89 NV_90 NV_91 NV_93: 38 39 40 41 42 43 44 52 87 88 89 90 91 93
VDD: 15 35 65 96 → VDDM
0 R567

MCLK0 → R124 51 → C73 0.01uF → R128 51 → MCLK0#

VDDMQ → C74 0.1uF → C75 0.1uF
VDDMQ → R129 1K → R130 1K → MVREF

MD[0..31]

RN1 15x4: DQ23 DQ22 DQ21 DQ20 — MD0 MD1 MD2 MD3
RN2 15x4: DQ19 DQ18 DQ17 DQ16 — MD4 MD5 MD6 MD7
RN3 15x4: DQ7 DQ6 DQ5 DQ4 — MD8 MD9 MD10 MD11
RN4 15x4: DQ3 DQ2 DQ1 DQ0 — MD12 MD13 MD14 MD15
RN5 15x4: DQ31 DQ29 DQ30 DQ28 — MD16 MD17 MD18 MD19
RN6 15x4: DQ27 DQ26 DQ25 DQ24 — MD20 MD21 MD22 MD23
RN7 15x4: DQ15 DQ14 DQ13 DQ12 — MD24 MD25 MD26 MD27
RN8 15x4: DQ11 DQ10 DQ9 DQ8 — MD28 MD29 MD30 MD31

MEMORY DECOUPLING SCHEME

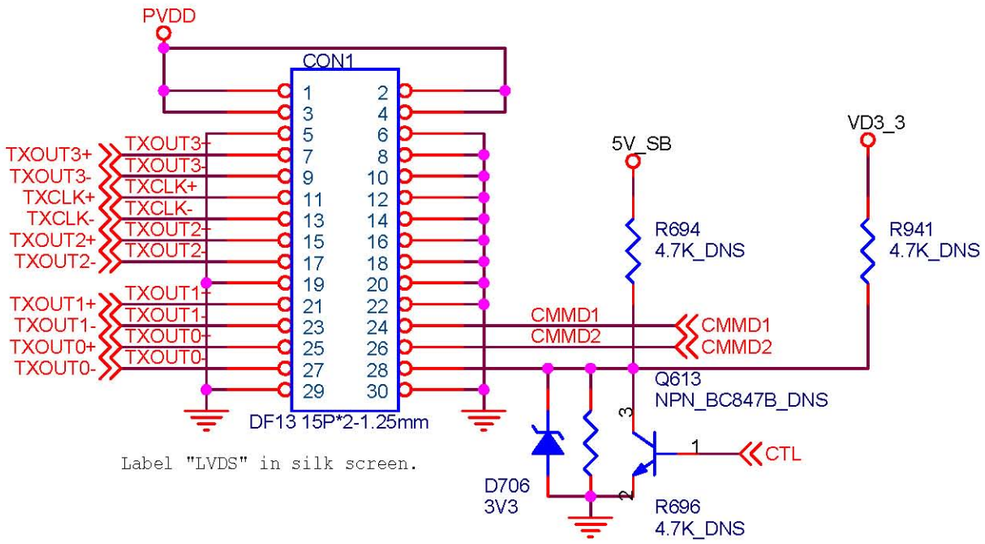
DDR VDDMQ / VDDM de-caps

VDDMQ: C76 0.1uF, C77 0.1uF, C78 0.01uF, C79 0.01uF, C80 0.01uF, C81 0.01uF, C82 0.01uF, C83 4700pF, C84 4700pF
VDDM: C85 0.1uF, C86 0.1uF, C87 0.01uF

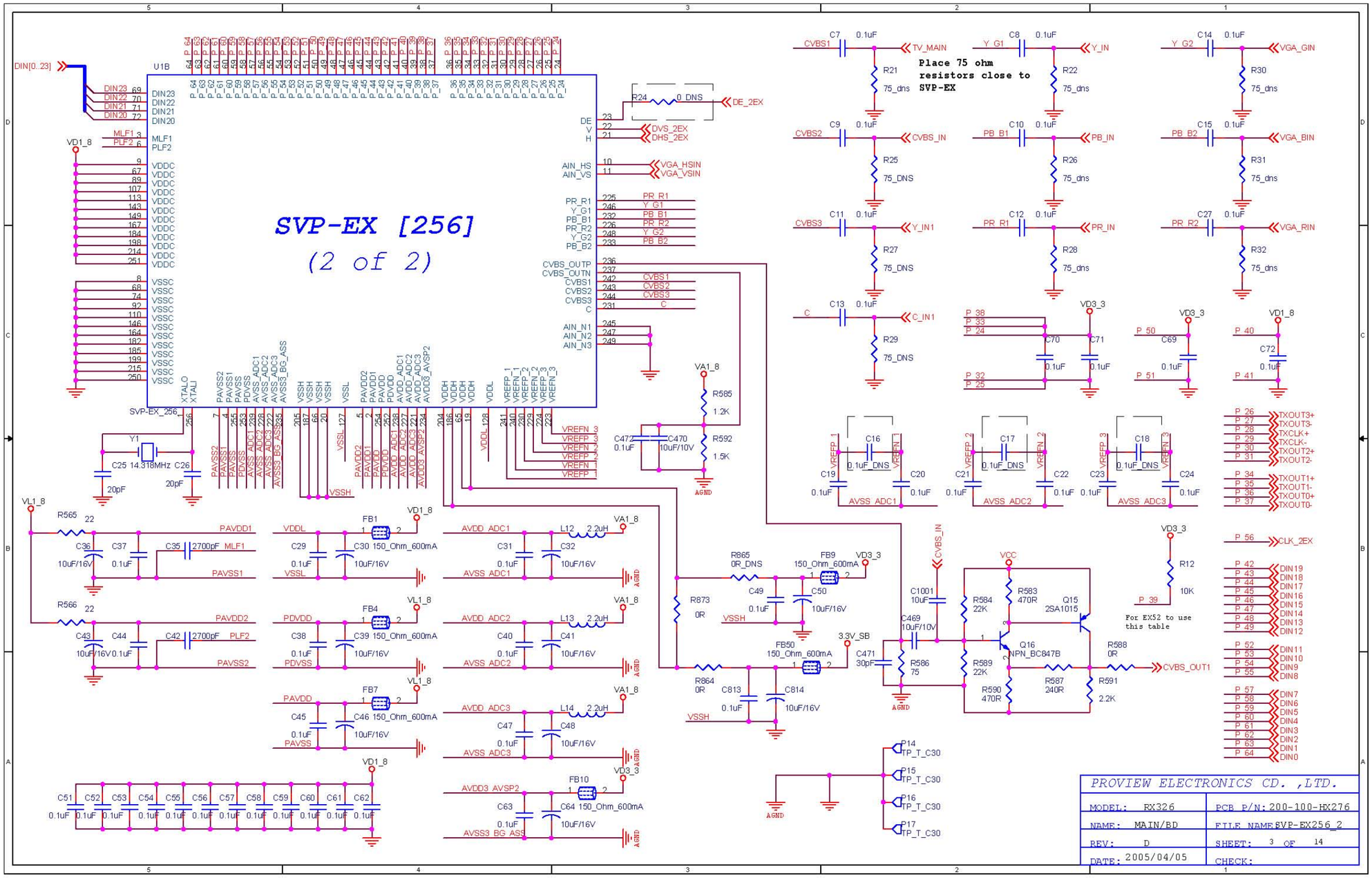
VDDMQ C88 10uF/16V, VDDMQ C89 4.7uF/16V, VDDM C90 10uF/16V
10uF uses either 1205 1210 6.3v or 10v

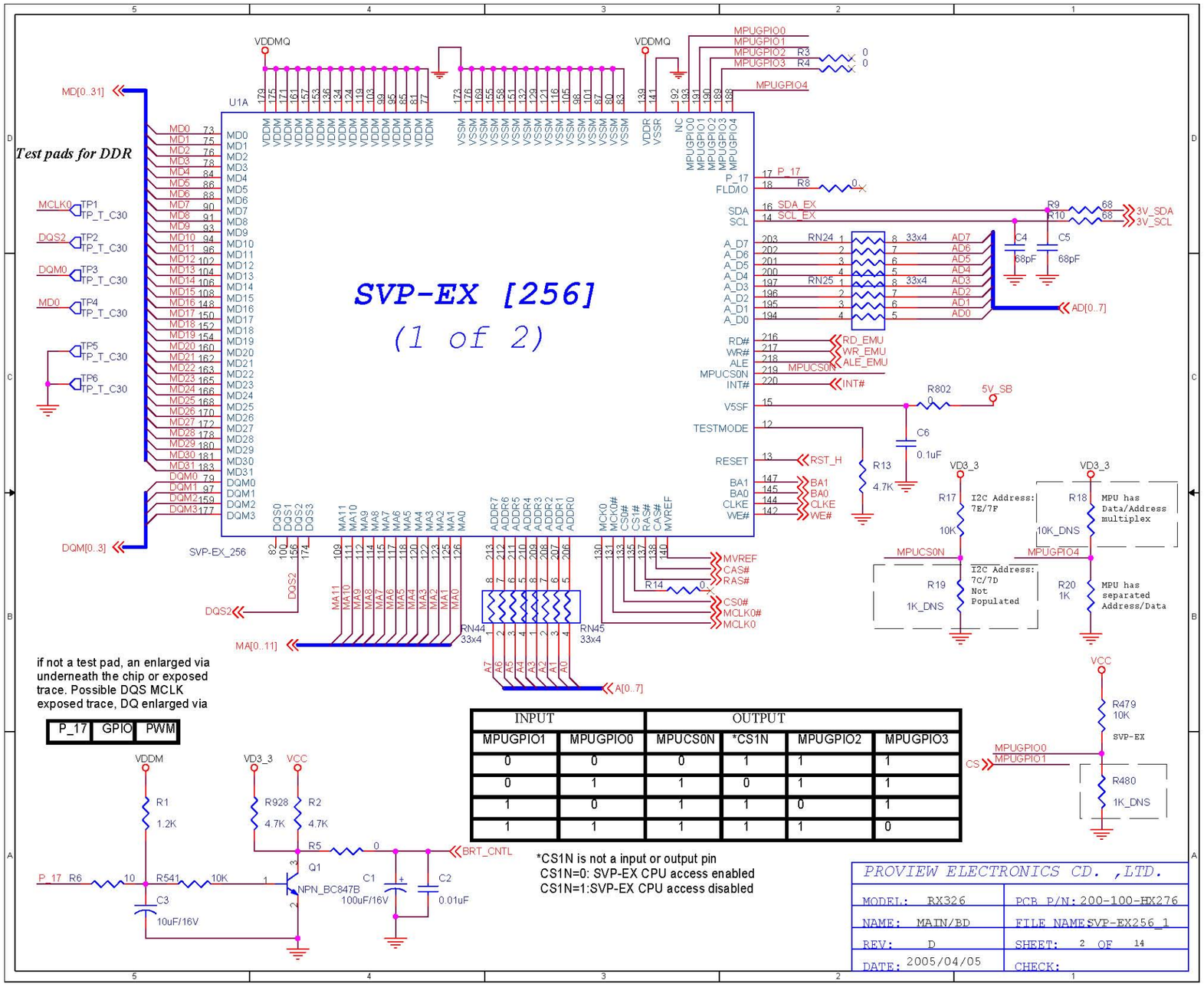
SDRAM DECOUPLING CAPACITORS

PROVIEW ELECTRONICS CD. ,LTD.	
MODEL: RX326	PCB P/N: 200-100-HX276
NAME: MAIN/BD	FILE NAME: SVP-EX_DDR
REV: D	SHEET: 5 OF 14
DATE: 2005/04/05	CHECK:



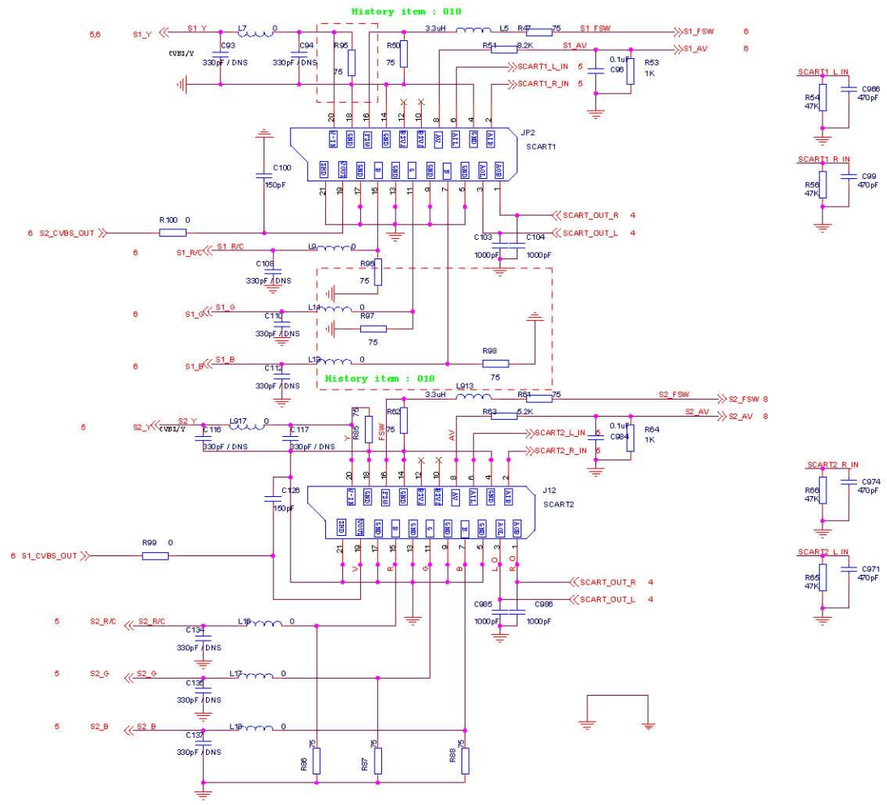
PROVIEW ELECTRONICS CD. ,LTD.	
MODEL: RX326	PCB P/N: 200-100-HX276
NAME: MAIN/BD	FILE NAME: SVP-CONFIG_PIN
REV: D	SHEET: 4 OF 14
DATE: 2005/04/05	CHECK:


SVP-EX [256]
(2 of 2)
U1B
SVP-EX_256
Place 75 ohm resistors close to SVP-EX
PROVIEW ELECTRONICS CD. ,LTD.
MODEL: RX326
PCB P/N: 200-100-HX276
NAME: MAIN/BD
FILE NAME: SVP-EX256_2
REV: D
SHEET: 3 OF 14
DATE: 2005/04/05
CHECK:

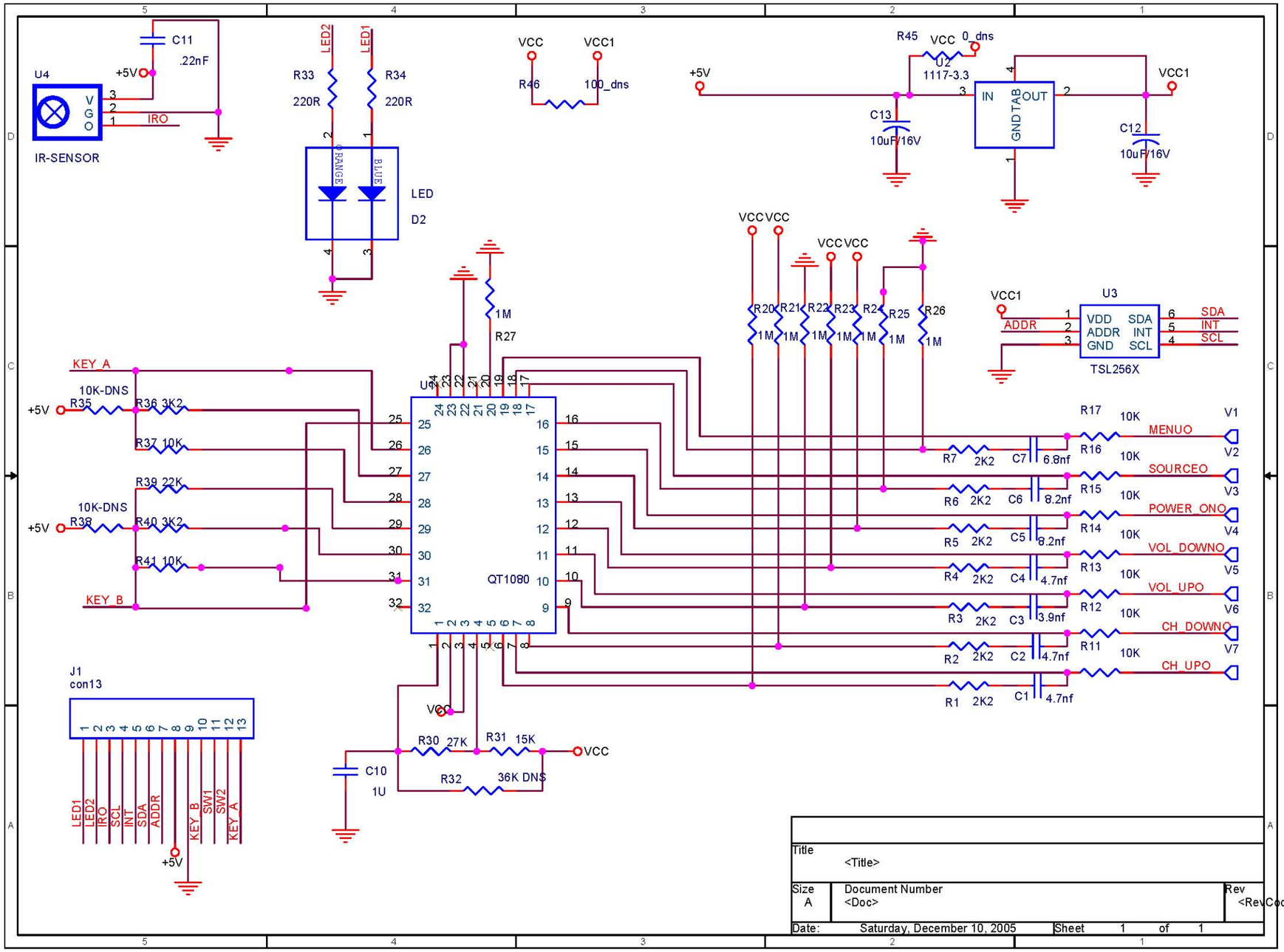


INPUT		OUTPUT			
MPUGPIO1	MPUGPIO0	MPUCS0N	*CS1N	MPUGPIO2	MPUGPIO3
0	0	0	1	1	1
0	1	1	0	1	1
1	0	1	1	0	1
1	1	1	1	1	0

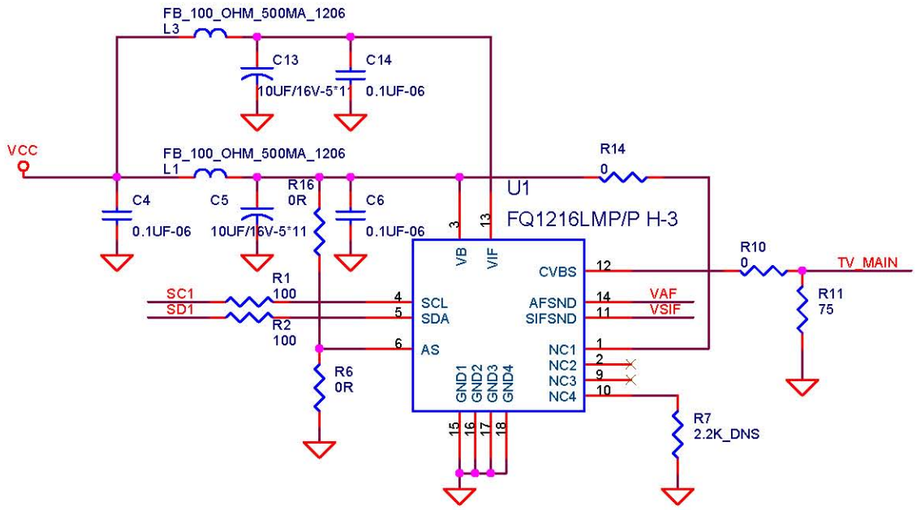
IO Board

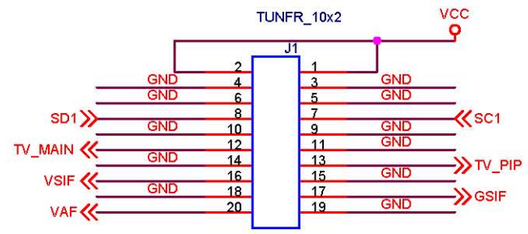

History item : 010
S1_Y
S1_R/C
S1_G
S1_B
S1_CVBS_OUT
S1_FSW
S1_AV
SCART1_L_IN
SCART1_R_IN
SCART_OUT_R
SCART_OUT_L
JP2
SCART1
History item : 010
S2_Y
S2_R/C
S2_G
S2_B
S2_CVBS_OUT
S2_FSW
S2_AV
SCART2_L_IN
SCART2_R_IN
J12
SCART2
SCART1 L IN
SCART1 R IN
SCART2 R IN
SCART2 L IN
Trident
TA0022
Scart
B
Tuesday, January 03, 2006

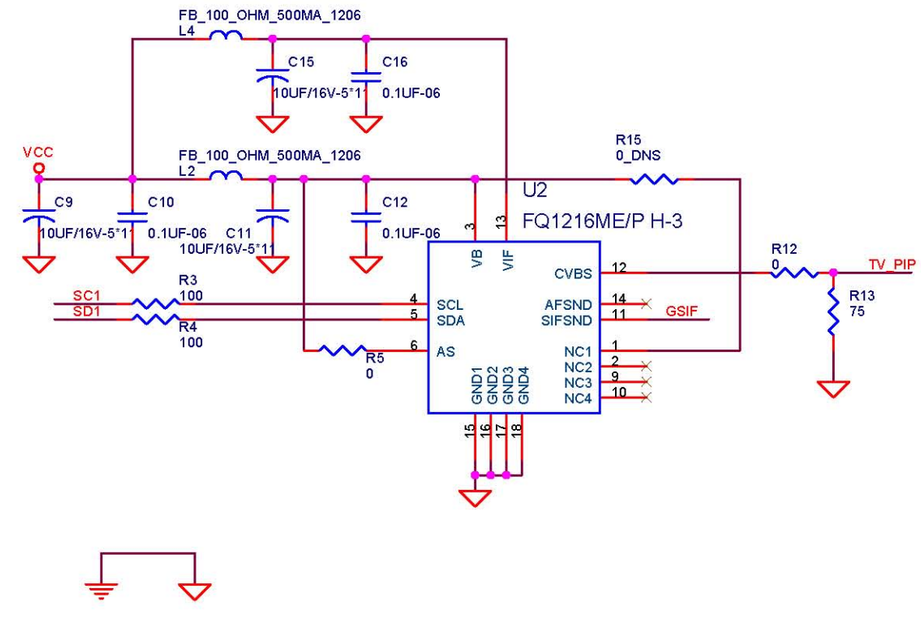
Keypad Board

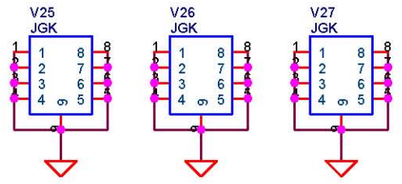


Tuner Board





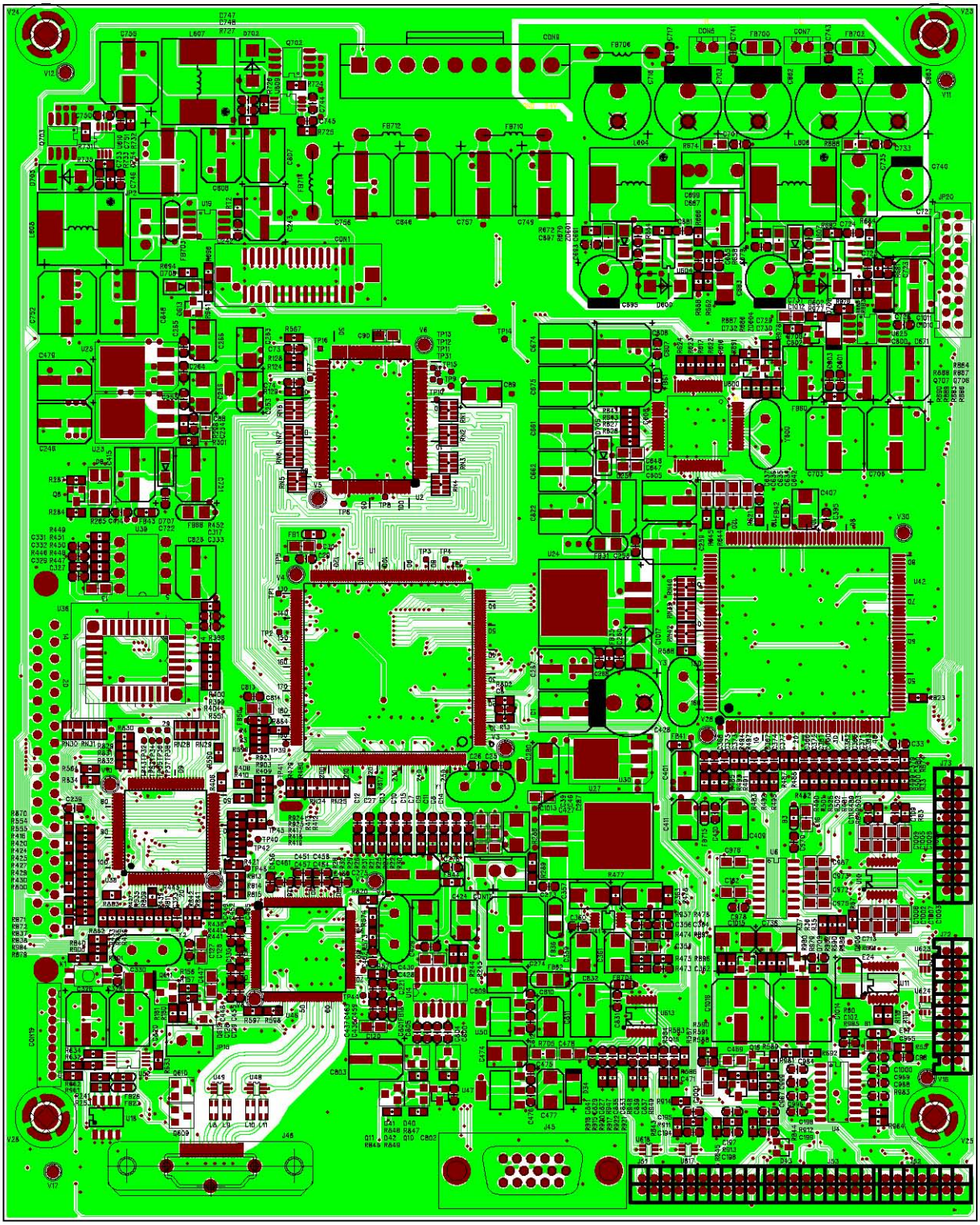




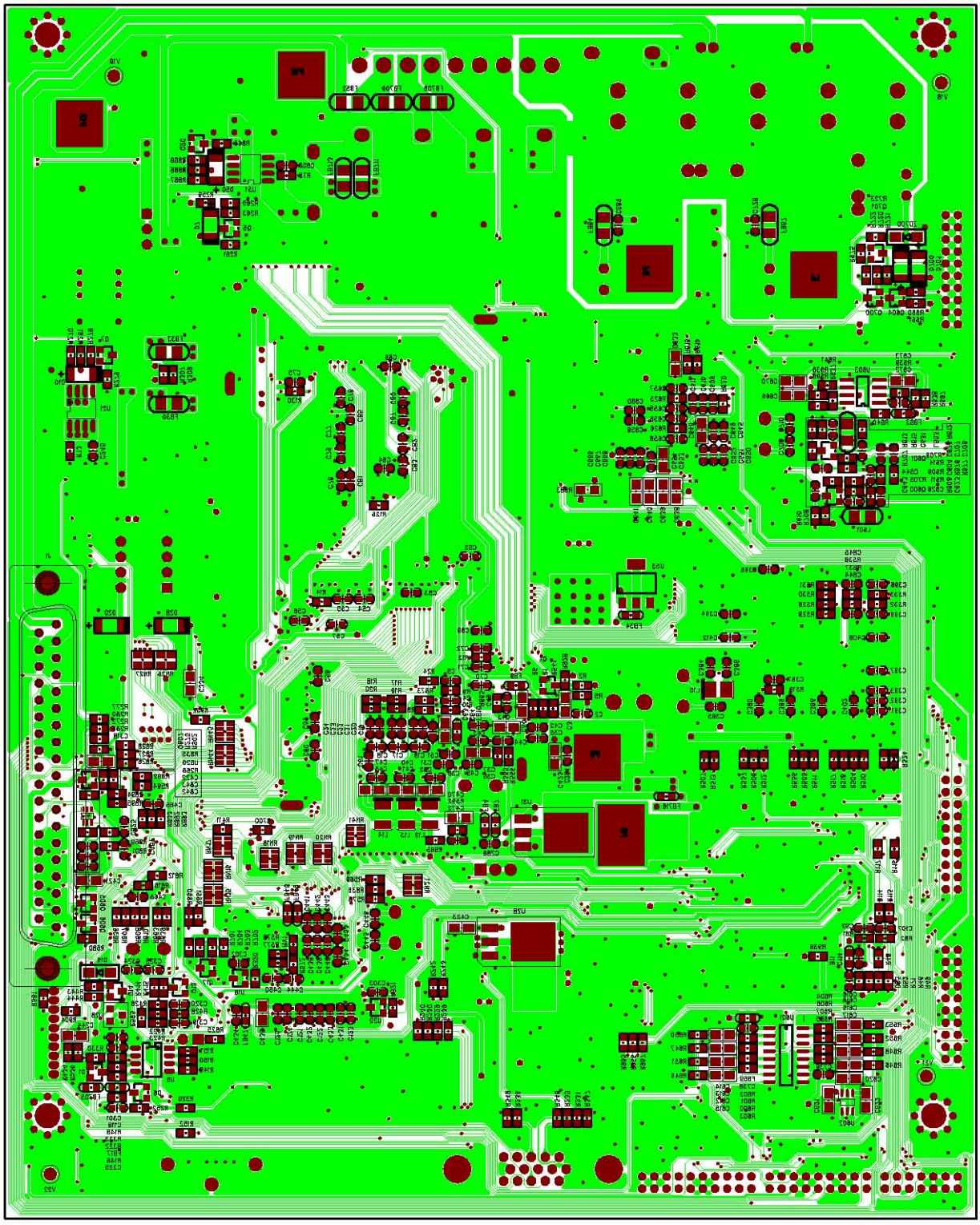
Title	<Title>	
Size A4	Document Number <Doc>	Rev <Rev
Date: Tuesday, January 03, 2006	Sheet 1 of 1	

9. PCB Layout Diagram

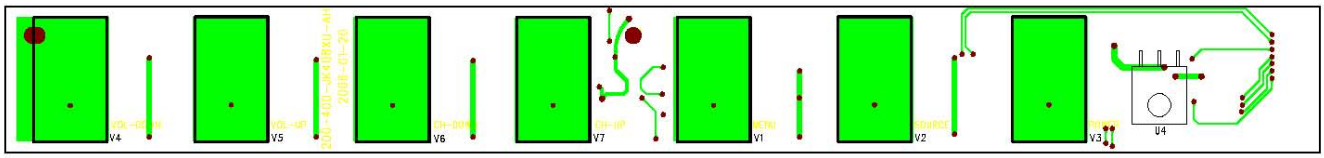
Main Board((Component Side Top)



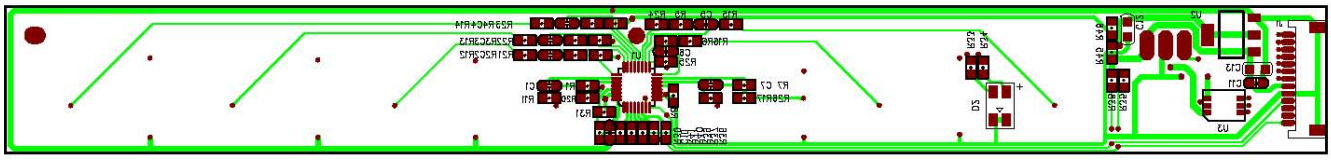
Main Board(Component Side Bottom)



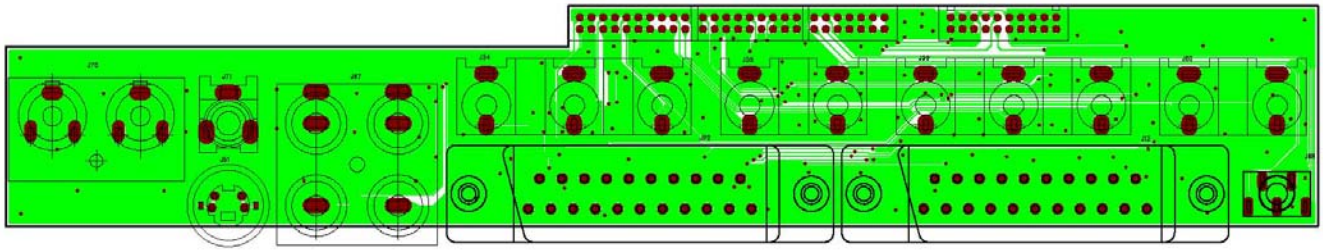
Keypad Board (Component Side Top)



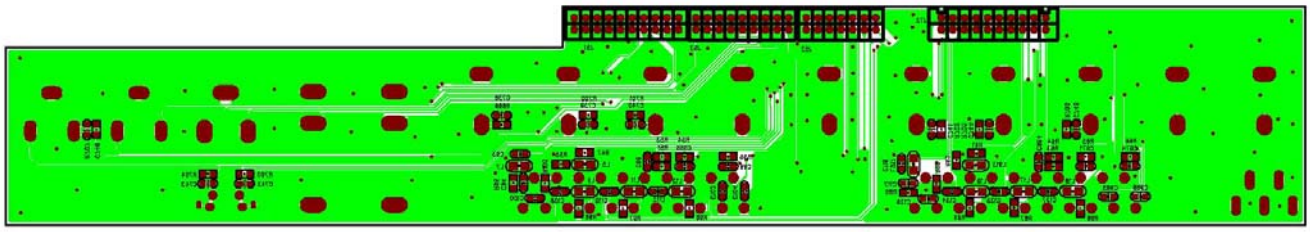
Keypad Board (Component Side Bottom)



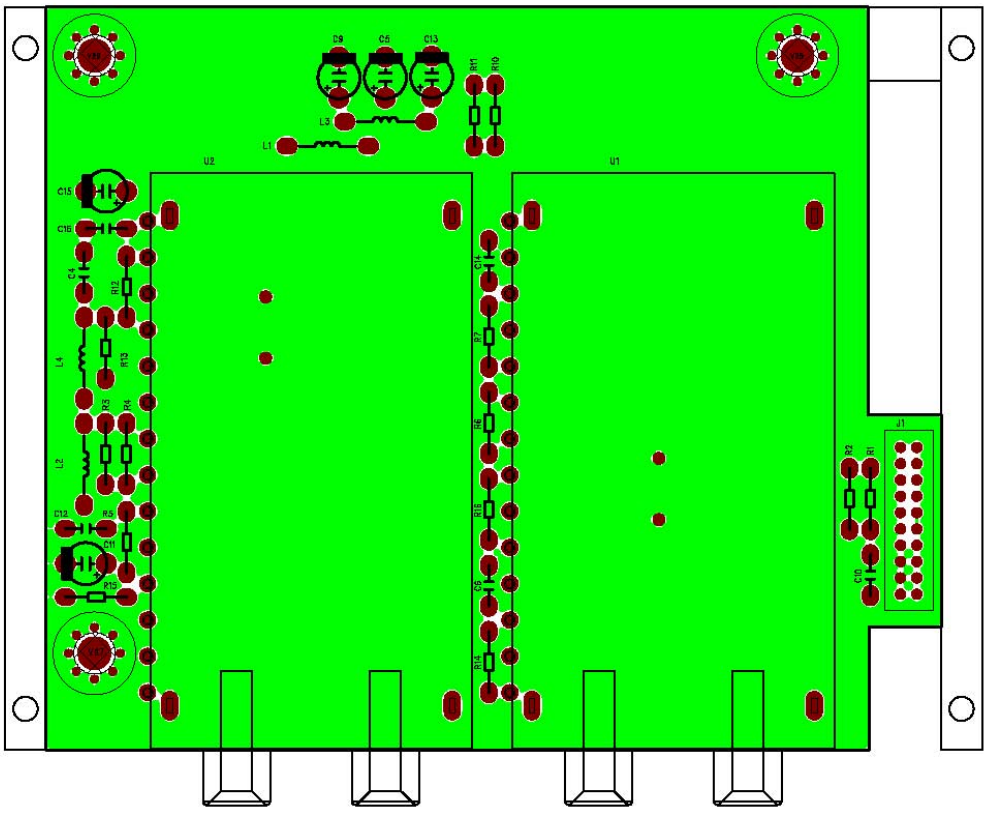
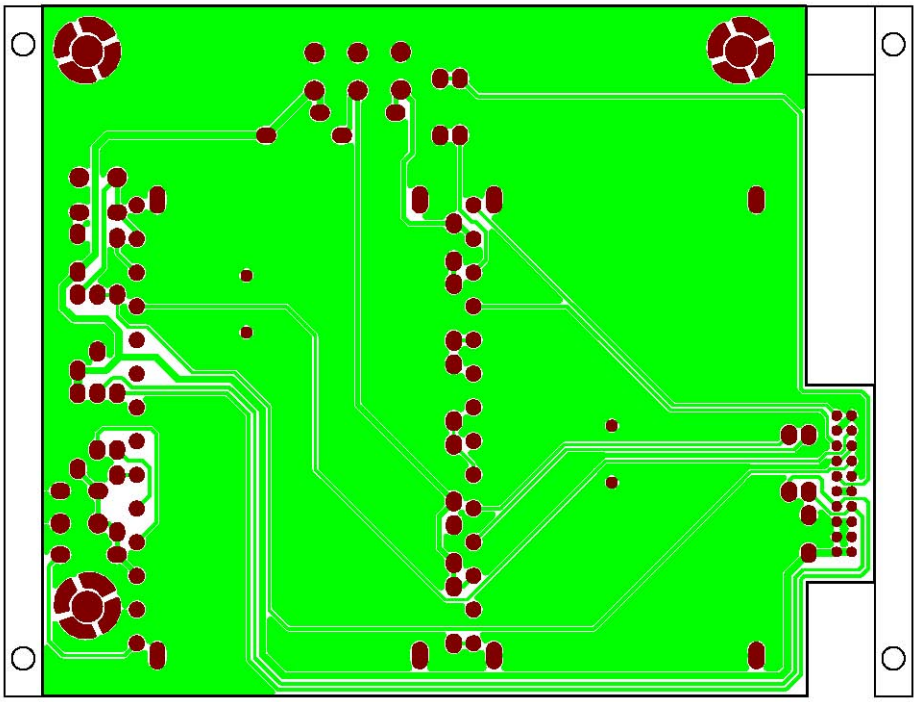
IO Board (Component Side Top)



IO Board (Component Side Bottom)



Tuner Board (Component Side Top)



Tuner Board (Component Side Bottom)